



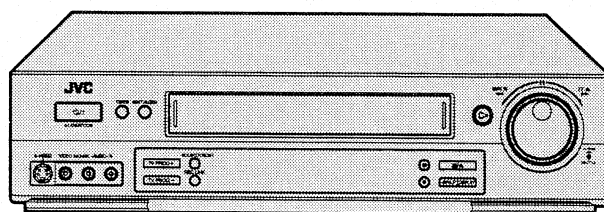
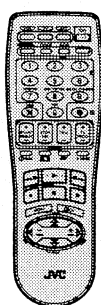
V21930

JVC

SERVICE MANUAL

VIDEO CASSETTE RECORDER

HR-S7500EK



Hi-Fi S VHS
625
VIDEO Plus+

SPECIFICATIONS

GENERAL

Power requirement	: AC 220 – 240 V~, 50/60 Hz
Power consumption	
Power on	: 26 W
Power off	: 5.5 W
Temperature	
Operating	: 5°C to 40°C
Storage	: -20°C to 60°C
Operating position	: Horizontal only
Dimensions (WxHxD)	: 400 x 94 x 347 mm
Weight	: 3.8 kg
Format	: S-VHS/VHS PAL standard
Maximum recording time	
(SP)	: 240 min. with E-240 video cassette
(LP)	: 480 min. with E-240 video cassette

VIDEO/AUDIO

Signal system	: PAL-type colour signal and CCIR monochrome signal, 625 lines/50 fields
Recording system	: DA4 (Double Azimuth) helical scan system
Signal-to-noise ratio	: 45 dB
Horizontal resolution	: 250 lines (VHS) 400 lines (S-VHS)
Frequency range	: 70 Hz to 10,000 Hz (Normal audio) 20 Hz to 20,000 Hz (Hi-Fi audio)
Input/Output	: 21-pin scart connectors (IN/OUT x 1, IN x 1) RCA connectors (VIDEO IN x 1, AUDIO IN x 1, AUDIO OUT x 1) S-Video connectors (IN x 1, OUT x 1)

TUNER/TIMER

TV channel storage capacity	: 99 positions (+AUX position)
Tuning system	: Frequency synthesized tuner
Channel coverage	: UHF channels 21 – 69 (470 – 862 MHz)
Aerial output	: UHF channels 22 – 69 (Adjustable)
Memory backup time	: Approx. 10 min.

ACCESSORIES

Provided accessories	: RF cable, Infrared remote control unit, "AA" battery x 2, Connector cover (for front panel connectors)
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Specifications shown are for SP mode unless otherwise specified.

E. & O.E. Design and specifications subject to change without notice.

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Safety Precautions

1. This design of this product contains special hardware and many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorised in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits.
2. Any unauthorised design alterations or additions will void the manufacturer's guarantee ; furthermore the manufacturer cannot accept responsibility for personal injury or property damage resulting therefrom.
3. Essential safety critical components are identified by () on the Parts List and by shading on the schematics, and must never be replaced by parts other than those listed in the manual. please note however that many electrical and mechanical parts in the product have special safety related characteristics. These characteristics are often not evident from visual inspection. Parts other than specified by the manufacturer may not have the same safety characteristics as the recommended replacement parts shown in the Parts List of the Service manual and may create shock, fire, or other hazards.
4. The leads in the products are routed and dressed with ties, clamps, tubings, barriers and the like to be separated from live parts, high temperature parts, moving parts and/or sharp edges for the prevention of electric shock and fire hazard. When service is required, the original lead routing and dress should be observed, and it should be confirmed that they have been returned to normal, after re-assembling.

Warning

1. Service should be performed by qualified personnel only.
2. This equipment has been designed and manufactured to meet international safety standards.
3. It is the legal responsibility of the repairer to ensure that these safety standards are maintained.
4. Repairs must be made in accordance with the relevant safety standards.
5. It is essential that safety critical components are replaced by approved parts.
6. If mains voltage selector is provided, check setting for local voltage.

INSTRUCTIONS

2

SAFETY FIRST

Safety Precautions

The rating plate and the safety caution are on the rear of the unit.

WARNING: DANGEROUS VOLTAGE INSIDE

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.

IMPORTANT

- Please read the various precautions on p. 2 – 4 of this instruction manual before installing or operating the recorder.
- It should be noted that it may be unlawful to re-record pre-recorded tapes, records, or discs without the consent of the owner of copyright in the sound or video recording, broadcast or cable programme and in any literary, dramatic, musical, or artistic work embodied therein.

IMPORTANT

Connection to the mains supply in the United Kingdom.

DO NOT cut off the mains plug from this equipment. If the plug fitted is not suitable for the power points in your home or the cable is too short to reach a power point, then obtain a proper safety approved extension lead/adaptor or consult your dealer.

In the unlikely event of the plug fuse failing be sure to replace the fuse only with an identical approved type, as originally fitted, and to replace the fuse cover. If the fuse fails again consult your nearest JVC dealer.

If nonetheless the mains plug is cut off remove the fuse and dispose of the plug immediately, to avoid a possible shock hazard by inadvertent connection to the mains supply.

If this product is not supplied fitted with a mains plug then follow the instructions given below:

DO NOT make any connection to the Larger Terminal coded E or Green.

The wires in the mains lead are coloured in accordance with the following code:



If these colours do not correspond with the terminal identifications of your plug, connect as follows:

Blue wire to terminal coded N (Neutral) or coloured Black.

Brown wire to terminal coded L (Live) or coloured Red.

If in doubt — consult a competent electrician.

3

CAUTION

- When you are not using the recorder for a long period of time, it is recommended that you disconnect the power cord from the mains outlet.
- Dangerous voltage inside. Refer internal servicing to qualified service personnel. To prevent electric shock or fire hazard, remove the power cord from the mains outlet prior to connecting or disconnecting any signal lead or aerial.

The STANDBY/ON ϕ /I button does not completely shut off mains power from the unit, but switches operating current on and off. " ϕ " shows electrical power standby and " I " shows ON.

Video tapes recorded with this video recorder in the LP (Long Play) mode cannot be played back on a single-speed video recorder.

Failure to heed the following precautions may result in damage to the recorder, remote control or video cassette.

1. DO NOT place the recorder . . .

- ... in an environment prone to extreme temperatures or humidity.
- ... in direct sunlight.
- ... in a dusty environment.
- ... in an environment where strong magnetic fields are generated.
- ... on a surface that is unstable or subject to vibration.

2. DO NOT block the recorder's ventilation openings.

3. DO NOT place heavy objects on the recorder or remote control.

4. DO NOT place anything which might spill on top of the recorder or remote control.

5. AVOID violent shocks to the recorder during transport.

MOISTURE CONDENSATION

Moisture in the air will condense on the recorder when you move it from a cold place to a warm place, or under extremely humid conditions—just as water droplets form in the surface of a glass filled with cold liquid. Moisture condensation on the head drum will cause damage to the tape. In conditions where condensation may occur, keep the recorder turned on for a few hours to let the moisture dry.

ABOUT HEAD CLEANING

Accumulation of dirt and other particles on the video heads may cause the playback picture to become blurred or interrupted. Be sure to contact your nearest JVC dealer if such troubles occur.



- Cassettes marked "S-VHS" and "VHS" can be used with this video cassette recorder. However, S-VHS recordings are possible only with cassettes marked "S-VHS".
- Video Plus+ and PlusCode are trademarks of Gemstar Development Corporation. The Video Plus+ system is manufactured under license from Gemstar Development Corporation.
- Certain audio features of this product manufactured under a license from Desper Products, Inc. Spatializer® is a trademark owned by Desper Products, Inc.

Some Do's And Don'ts On The Safe Use Of Equipment

This equipment has been designed and manufactured to meet international safety standards but, like any electrical equipment, care must be taken if you are to obtain the best results and safety is to be assured.

- DO** read the operating instructions before you attempt to use the equipment.
- DO** ensure that all electrical connections (including the mains plug, extension leads and interconnections between pieces of equipment) are properly made and in accordance with the manufacturer's instructions. Switch off and withdraw the mains plug when making or changing connections.
- DO** consult your dealer if you are ever in doubt about the installation, operation or safety of your equipment.
- DO** be careful with glass panels or doors on equipment.
- DON'T** continue to operate the equipment if you are in any doubt about it working normally, or if it is damaged in any way — switch off, withdraw the mains plug and consult your dealer.
- DON'T** remove any fixed cover as this may expose dangerous voltages.
- DON'T** leave equipment switched on when it is unattended unless it is specifically stated that it is designed for unattended operation or has a standby mode. Switch off using the switch on the equipment and make sure that your family knows how to do this. Special arrangements may need to be made for infirm or handicapped people.
- DON'T** use equipment such as personal stereos or radios so that you are distracted from the requirements of road safety. It is illegal to watch television whilst driving.
- DON'T** listen to headphones at high volume, as such use can permanently damage your hearing.
- DON'T** obstruct the ventilation of the equipment, for example with curtains or soft furnishings. Overheating will cause damage and shorten the life of the equipment.
- DON'T** use makeshift stands and NEVER fix legs with wood screws — to ensure complete safety always fit the manufacturer's approved stand or legs with the fixings provided according to the instructions.
- DON'T** allow electrical equipment to be exposed to rain or moisture.

ABOVE ALL...

- **NEVER** let anyone especially children push anything into holes, slots or any other opening in the case — this could result in a fatal electrical shock;
- **NEVER** guess or take chances with electrical equipment of any kind — it is better to be safe than sorry!

► Dear Customer,

Thank you for purchasing this JVC Video Cassette Recorder.

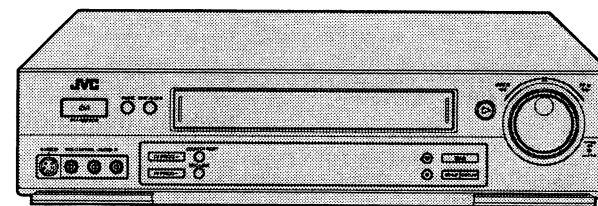
Please use this **QUICK SET UP GUIDE** to help you to set up your video cassette recorder.

STEP

1

CHECK THE CONTENTS

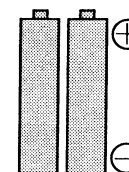
CHECK ALL THE CONTENTS SHOWN BELOW



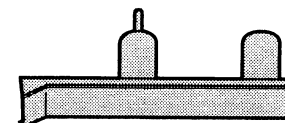
Video Cassette Recorder



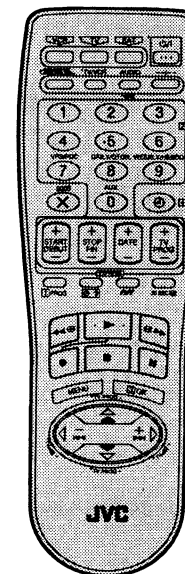
RF Cable



"AA" Batteries (x 2)



Connector Cover
(for front panel connectors)



Infrared Remote Control Unit

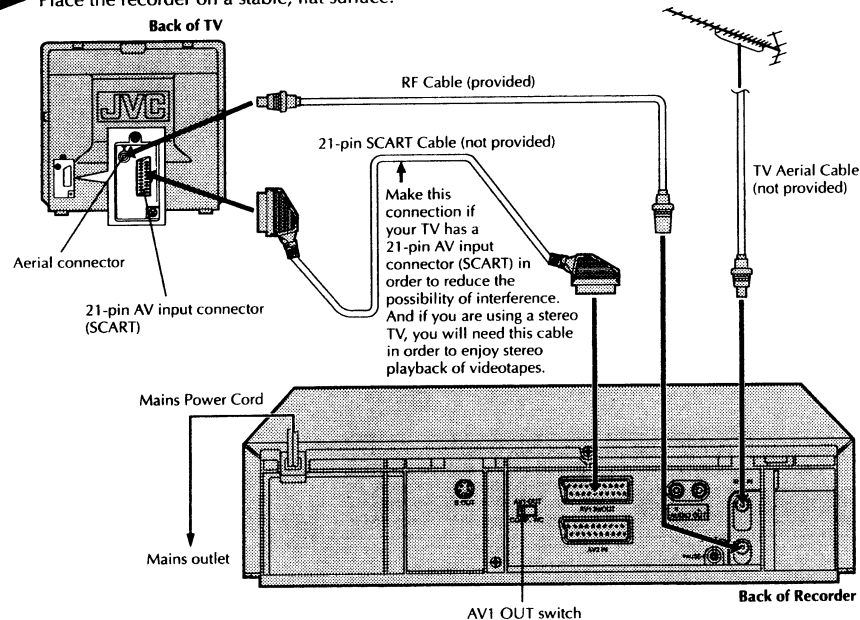
► You are now ready to install your video recorder.

STEP 2

INSTALLATION

CONNECT VIDEO RECORDER TO TV

- Place the recorder on a stable, flat surface.

**RF CONNECTION**

To connect to a TV with NO 21-pin AV input connector (SCART)...

- 1- Disconnect the TV aerial cable from the TV.
- 2- Connect the TV aerial cable to the ANT. IN jack on the rear panel of the recorder.
- 3- Connect the provided RF cable between the RF OUT jack on the rear panel of the recorder and the TV's aerial connector.

AV1 OUT switch**AV CONNECTION**

To connect to a TV with 21-pin AV input connector (SCART)...

- 1- Connect the aerial, recorder and TV as per "RF CONNECTION".
- 2- Connect an optional SCART cable between the AV1 IN/OUT socket on the rear panel of the recorder and the TV's 21-pin AV input connector (SCART).
- 3- Set the **AV1 OUT** switch to the appropriate position. See "AV1 OUTPUT SIGNAL SELECTION FOR AV CONNECTION" below.

AV1 OUTPUT SIGNAL SELECTION FOR AV CONNECTION

The AV1 IN/OUT connector accepts only a composite video signal (regular video signal), but can deliver either a composite video signal or a Y/C signal (a signal in which the luminance and chrominance signals are separated) according to the setting of the rear panel **AV1 OUT** switch.

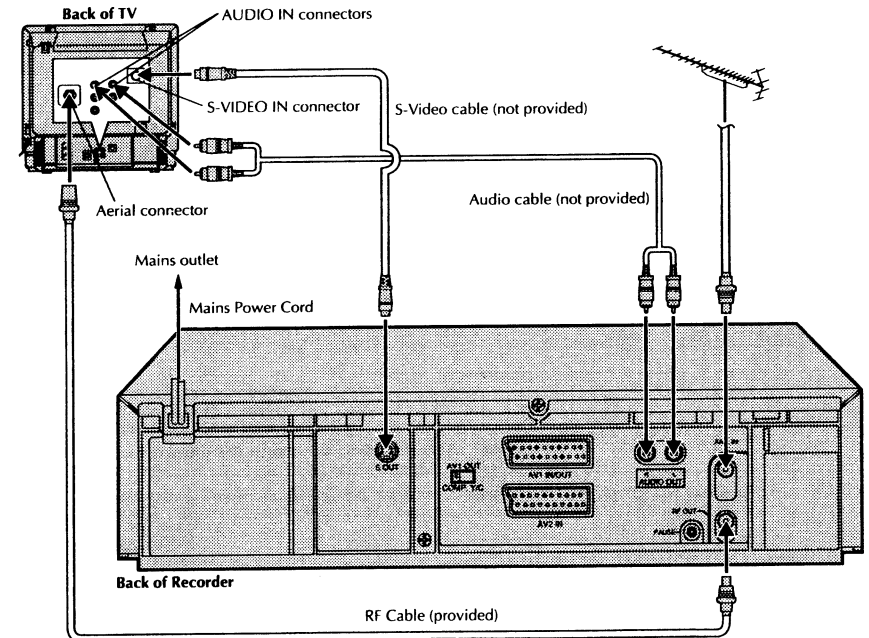
- If your TV's 21-pin AV input connector (SCART) is compatible only with the regular video signal, set this switch to **COMP**.
- If your TV's 21-pin AV input connector (SCART) is compatible with the Y/C signal, set this switch to **Y/C**. You can obtain high-quality S-VHS pictures.

NOTES:

- Set your TV to the **VIDEO** (or **AV**), **Y/C**, or **RGB** mode according to the type of your TV's SCART connector.
- For switching the TV's mode, refer to the instruction manual of your television.
- To obtain high-quality S-VHS pictures, you can also use the **S-VIDEO CONNECTION** described on page 7.

ATTENTION

- Do NOT Plug the mains power cord into a mains outlet until all connections are completed.
- Do NOT press the **⏻** button on the recorder or on the remote control to turn on the recorder's power before you start the Auto Set Up procedure described on page 8.

**S-VIDEO CONNECTION**

To connect to a TV with S-VIDEO/AUDIO IN connectors...

- 1- Connect the aerial, recorder and TV as per "RF CONNECTION".
- 2- Connect the recorder's S-VIDEO OUT connector to the TV's S-VIDEO IN connector.
- 3- Connect the recorder's AUDIO OUT connectors to the TV's AUDIO IN connectors.

NOTES:

- You can obtain high-quality S-VHS pictures.
- If your television is not stereo-capable, use the recorder's **AUDIO OUT** connectors to connect to an audio amplifier for Hi-Fi stereo sound reproduction. (pg. 37)
- To operate the recorder with your TV using the **S-VIDEO** connection, set your TV to the **VIDEO** (or **AV** mode).
- For switching the TV's mode, refer to the instruction manual of your television.

ATTENTION

- Do NOT Plug the mains power cord into a mains outlet until all connections are completed.
- Do NOT press the **⏻** button on the recorder or on the remote control to turn on the recorder's power before you start the Auto Set Up procedure described on page 8.

AFTER YOU FINISH THIS STEP

Go to Step 3 – AUTO SET UP

STEP 3 AUTO SET UP

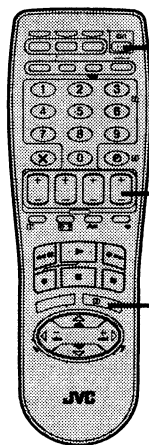
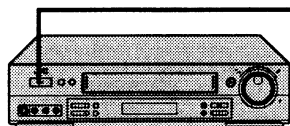
SET THE TUNER CHANNELS, CLOCK, GUIDE PROGRAM NUMBERS AND VIDEO CHANNEL*

The Auto Set Up function sets the tuner channels, clock, Video Plus+ assigned Guide Program numbers and the video channel* automatically the first time the ψ /I button on the recorder or on the remote is pressed to turn on the recorder after the mains power cord has been plugged into a mains outlet.

* Useful if you have connected the video recorder to your TV via RF connection (see pg. 6). Video Channel (RF output channel) is the channel on which your TV receives picture and sound signals from the video recorder through the RF cable.

Before performing the following procedure, make sure that:

- the TV aerial cable is connected to the recorder.
- the mains power cord is plugged into the mains outlet.
- batteries have been installed in the remote control.



1 Press ψ /I.

"Auto" appears on the display panel and blinks; do NOT press any button on the recorder or remote control until the display panel shows either the display as illustrated below in item **2** or "--:--". Auto Set Up usually takes about 4 – 12 minutes; the duration varies by area.

- If "--:--" appears on the display panel, refer to next page.
- If you have connected the video recorder to your TV via both the provided RF cable and a 21-pin SCART cable (AV connection) or via the provided RF cable, an S-Video cable and an audio cable (S-VIDEO connection) and if the TV is turned on and set to its AV mode, the AUTO SET screen will appear.

Beginning End

2

- If you have connected the video recorder to your TV via the provided RF cable only (RF connection) — the channel that is shown on the display panel is your Video Channel. To view picture signals from the video recorder, set your TV to the Video Channel. — Refer to the instructions supplied with your TV set for how to do this.
- If you have connected the video recorder to your TV via both the provided RF cable and a 21-pin SCART cable (AV connection), or via the provided RF cable, an S-Video cable and an audio cable (S-VIDEO connection) — you do not need the video channel so you have to set the video channel to off. Press TV PROG — until the display panel shows ".OUT—" to set the Video Channel to off. To view picture signals from the video recorder, set your TV to its AV mode. — Refer to the instructions supplied with your TV set for how to do this.

Go to item **3**.

3 Press OK to finish Auto Set Up and refer to next page to check the results.

ATTENTION

Once you have performed Auto Set Up, all the stored stations, Guide Program numbers and the video channel remain in the recorder's memory and the recorder will not perform Auto Set Up again. If there is a power cut and the recorder's memory backup expires you only need to reset the clock. (see pg. 47)

If you have moved to a different area, perform each setting as required.

- Video Channel setting (for RF connection users) see pg. 38
- Tuner setting see pg. 40
- Clock setting see pg. 47

If a new station begins broadcasting in your area, perform tuner setting (see pg. 40) and, if necessary, video channel setting (see pg. 38).

NOTES:

- Auto channel set function takes place first; it assigns automatically all receivable stations in your area.
- Auto clock set function sets the clock automatically.
- During auto channel set, the recorder recognizes each station name of the detected stations and stores them in the recorder's memory, then automatically sets the Video Plus+ assigned Guide Program number for those stations according to the broadcast area.
- For RF connection users: The video recorder detects the channels which are not occupied by local stations and selects one channel automatically for your Video Channel that is located in the middle of more than 5 vacant channels.
- If there is power cut or if you press ψ /I or MENU while Auto Set Up is in progress, Auto Set Up will be interrupted; be sure to turn off the recorder power once and press ψ /I to turn the power back on in order to re-start Auto Set Up.

Auto Set Up results appear on the display panel

- A** When both auto channel set and auto clock set have been completed successfully the correct current time will be displayed after the OK button is pressed in item **3** on page 8.
- B** When auto channel set has been completed successfully but auto clock set has not, "(PR)1" will be displayed after the OK button is pressed in item **3** on page 8.
- C** When neither auto channel set nor auto clock set has been completed successfully, "--:--" will be displayed.

* You can check if the Guide Program numbers have been set correctly when you perform Video Plus+ Timer Programming (see pg. 14); if the correct preset position number is displayed in step 3, this confirms that the Guide Program number for the PlusCode number you enter in step 2 has been set correctly.

A If both auto channel set and auto clock set have been performed successfully:

- Turn on the TV and select its VIDEO channel or AV mode, then make sure that all necessary stations have been stored in the recorder's memory by using the TV PROG button(s).
 - If station names (ID — see pg. 45) have also been stored in the recorder's memory, the station name will be displayed at the top left corner of the screen for about 5 seconds each time the recorder is tuned to a different station.
 - If you want to set the tuner manually such as to add or skip channels, to change preset positions, or to set or change station names, see pages 42 – 44.

Now you have finished the basic set up and can use your recorder for both playback and recording.

B If auto channel set has succeeded but auto clock set has not:

- Turn on the TV and select its VIDEO channel or AV mode, then make sure that all necessary stations have been stored in the recorder's memory by using the TV PROG button(s).
 - If station names (ID — see pg. 45) have also been stored in the recorder's memory, the station name will be displayed at the top left corner of the screen for about 5 seconds each time the recorder is tuned to a different station.
 - If you want to set the tuner manually such as to add or skip channels, to change preset positions, or to set or change station names, see pages 42 – 44.
- Perform "Clock Set" on page 47.

Now you have finished the basic set up and can use your recorder for both playback and recording.

C If both auto channel set and auto clock set have failed:

- Make sure the TV aerial cable is connected properly to the recorder and turn off the recorder power once, then turn the recorder power back on again.
 - The recorder will try Auto Set Up again.

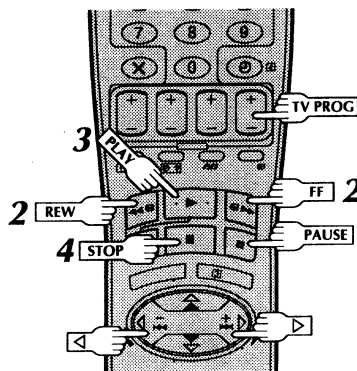
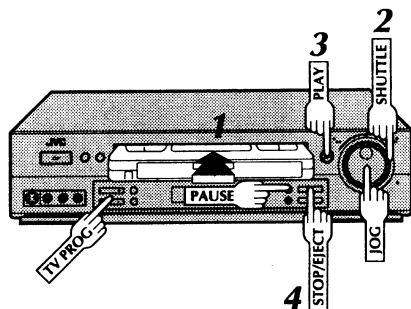
IMPORTANT

- In certain reception conditions, station names may not be stored correctly, and auto Guide Program Number Set may not work properly. If the Guide Program numbers are not set properly, when you timer-record a TV programme using Video Plus+, the recorder will record a TV programme of a different station. When programming the timer using Video Plus+, be sure to check that the preset position corresponding to the broadcasting station you wish to record has been selected (see pg. 14, "Video Plus+ Timer Programming").
- Your video recorder memorizes all detected stations even if reception of some of them is poor. In these cases picture quality may be poor. To delete those stations which have an unacceptable picture see "Delete A Channel" on page 43.
- If any of the above problems occur, refer to pages 42 – 44 to input station names (see "Set Stations") or delete unnecessary stations (see "Delete A Channel"). You can also change station preset positions (see "Change Station Preset Position").
- For RF connection users: In certain reception conditions, the Video Channel may not be set correctly and interference may appear in the TV picture while the recorder's power is on. Set your Video Channel manually. see pg. 38, "Video Channel Set".

If you have any difficulty with the above procedures call the JVC Customer Service Hot Line on 0181 208 7654

Playback

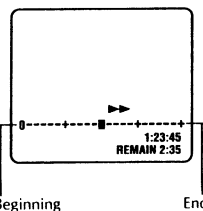
Turn on the TV and select the VIDEO channel (or AV mode).



Tape Position Indicator

The tape position indicator appears on screen when, from the Stop mode, you press **FF**, **REW** or perform an Index Search. The position of "■" in relation to "0" (beginning) or "+" (end) shows you where you are on the tape.

"O.S.D." (pg. 34) must be set to "ON", or the indicator will not appear.



NOTE:

Depending on the type of tape used, there may be times when the indication is not correct.

The easiest, most basic operation possible with your video recorder is tape playback. Already-recorded signals on a video tape are read by your video recorder and displayed on your TV just like a TV programme.

LOAD A CASSETTE

- 1 Make sure the window side is up, the rear label side is facing you and the arrow on the front of the cassette is point toward the recorder. Don't apply too much pressure when inserting.

- The recorder power comes on automatically and the counter is reset to 0:00:00.
- If the record safety tab has been removed, playback begins automatically.

FIND PROGRAMME START POINT

- 2 If the tape is advanced past the start point, press **REW** or turn the **SHUTTLE** ring to the left. To go forward, press **FF** or turn the **SHUTTLE** ring to the right.

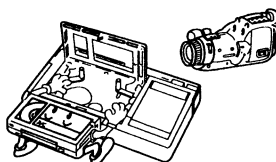
START PLAYBACK

- 3 Press **PLAY**. "BEST" appears blinking in the recorder's display panel during automatic tracking (pg. 20).
- Playback picture quality of LP recordings will not be as high as SP recordings.

STOP PLAYBACK

- 4 Press **STOP** on the remote or **STOP/EJECT** on the recorder's front panel. Then press **STOP/EJECT** to remove the cassette.

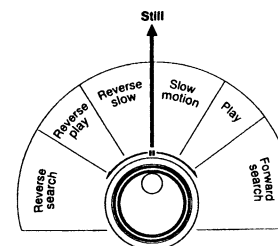
Usable cassettes



- Compact VHS camcorder recordings can be played on this video recorder. Simply place the recorded cassette into a VHS Cassette Adapter and it can be used just like any full-sized VHS cassette.
- This video recorder can record on regular VHS and Super VHS cassettes. While only VHS signals can be recorded on regular VHS cassettes, both VHS and Super VHS signals can be recorded and played back using Super VHS cassettes.

NOTE:

Refer to the **SHUTTLE** ring illustration below as you read the following procedures.



Still Picture/Frame-By-Frame Playback

1 PAUSE DURING PLAYBACK

Press **PAUSE**. If there is vertical jitter, use the **TV PROG** buttons to correct the picture.

2 ACTIVATE FRAME-BY-FRAME PLAYBACK

Turn the **JOG** dial to the right for forward frame-by-frame playback, or to the left for reverse frame-by-frame playback.

OR

Press **PAUSE**. Each time **PAUSE** is pressed the tape will advance one frame.

OR

Press **<** or **>**. Each time one of these buttons is pressed the tape will move one frame in the direction of the arrow.

To resume normal playback, press **PLAY**.

Slow Motion

1 ACTIVATE SLOW-MOTION PLAYBACK

During playback or still picture, turn the **SHUTTLE** ring to the right for forward slow motion, or to the left for reverse slow motion (refer to the illustration above).

OR

During still picture, press and hold **PAUSE** for 2 seconds, then release. Press and release again to return to still picture.

OR

During still picture, press and hold **<** or **>**. Release to return to still picture.

To resume normal playback, press **PLAY**.

Variable-Speed Search

1 ACTIVATE VARIABLE-SPEED SEARCH

During playback or still, turn the **SHUTTLE** ring to the right for forward variable-speed search, or to the left for reverse variable-speed search (refer to the illustration at left).

OR

During playback, press **<** or **>**.

- The more times you press, the faster the playback picture moves.
- To decrease speed, press the button for the opposite direction.

To resume normal playback, press **PLAY**.

High-Speed (Turbo) Search

1 ACTIVATE HIGH-SPEED SEARCH

During playback or still, turn the **SHUTTLE** ring all the way to the right for forward high-speed search, or to the left for reverse high-speed search. Releasing **SHUTTLE** resumes still picture playback.

OR

- For forward high-speed search, turn the **SHUTTLE** ring all the way to the right and release it within 1 second.
- For reverse high-speed search, turn the **SHUTTLE** ring all the way to the left and release it within 1 second.

OR

During playback or still picture, press **FF** for forward high-speed search, or **REW** for reverse high-speed search.

To resume normal playback, press **PLAY**.

NOTE:

For short searches, press and hold **FF** or **REW** for more than 2 seconds during playback or still picture. When released, normal playback resumes.

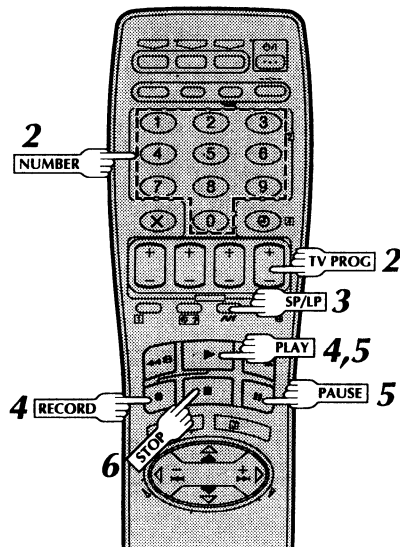
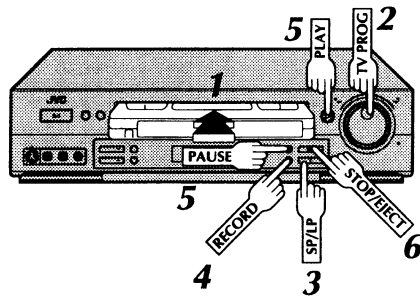
ATTENTION

In the search, still, slow-motion or frame-by-frame playback mode,

- the picture will be distorted.
- noise bars will appear.
- there will be loss of colour with a tape recorded in LP mode.

Recording

Turn on the TV and select the VIDEO channel (or AV mode).



Recording Resume Function

If there is a power outage during recording (or Instant Timer Recording or timer recording), the recording will resume automatically when power is restored to the recorder unless the recorder's memory backup has expired.

TV signals being received by the recorder's built-in tuner can be recorded onto a video tape. You can "capture" a TV programme using your video recorder.

LOAD A CASSETTE

Insert a cassette with the record safety tab intact (See below).

- The counter is reset to 0:00:00 and the recorder power comes on automatically.

CHOOSE A PROGRAMME

Press **TV PROG** +/- or the **NUMBER** keys to select the preset you wish to record.

- The **TV PROG** dial can also be used to select a preset.

SET TAPE SPEED

Press **SP/LP** (//). Check the SP/LP indicator on the recorder display panel to confirm the selected tape speed.

- Picture quality of LP recordings will not be as high as on SP recordings.

START RECORDING

Press and hold **RECORD** and press **PLAY** on the remote control, or press **RECORD** on the recorder.

B.E.S.T. takes place at the beginning of both the first SP and the first LP recording after inserting the cassette (see pg. 20).

- You can not change the preset whilst recording is in progress. To change the preset, see step 5.

PAUSE/RESUME RECORDING

Press **PAUSE**. Press **PLAY** to resume recording.

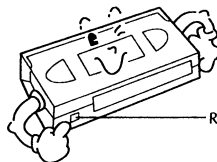
- During the Record Pause mode, you can change the preset by pressing the **TV PROG** +/- buttons or the **NUMBER** keys or by turning the **TV PROG** dial.

STOP RECORDING

Press **STOP** on the remote control or **STOP/EJECT** on the recorder. Then press **STOP/EJECT** to remove the cassette.

Accidental erasure prevention

- To prevent accidental recording on a recorded cassette, remove its safety tab. To record on it later, cover the hole with adhesive tape.



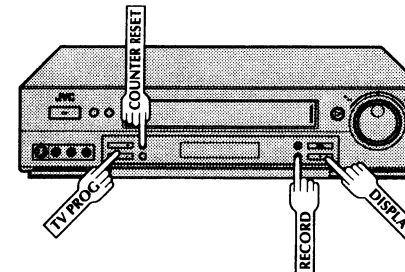
Record safety tab

Record One Programme While Watching Another

1 SELECT PRESET TO WATCH

Once recording is in progress, all you need to do is to set the preset controls on the TV for the station you wish to view.

- The programme selected with the TV's preset controls appears on the TV screen while the one selected with the recorder's **TV PROG** buttons is recorded on the tape.



Elapsed Recording Time Indication

You can check the exact time of a recording.

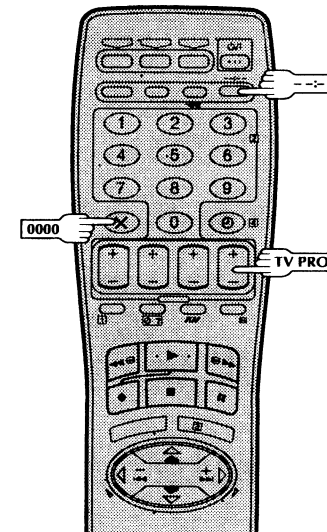
1 SET COUNTER DISPLAY

Press **DISPLAY** (or -- --) until a counter reading appears on the display panel.

2 RESET COUNTER

Press **COUNTER RESET** or **0000** before starting recording or playback.

- The counter is reset to "0:00:00" and shows the exact elapsed time as the tape runs.



Instant Timer Recording (ITR)

This easy method allows you to record for any length of time from 30 mins. to 6 hours (selectable in 30-min. increments), and shuts off the recorder after recording is finished.

1 START RECORDING

Press **RECORD** on the recorder.

2 ENGAGE ITR MODE

Press **RECORD** again. "ITR" blinks and 0:30 appears on the front display panel.

3 SET RECORDING DURATION

If you want to record for more than 30 minutes, press **RECORD** to extend the time. Each press extends recording time by 30 minutes.

NOTE:

You can only perform ITR using the **RECORD** button on the recorder's front panel.

Tape Remaining Time

1 DISPLAY REMAINING TIME

Press **DISPLAY** (or -- --) until the time remaining on the tape appears.

- The display panel shows the tape remaining time with "T" displayed.
- By pressing the **DISPLAY** (or -- --) button, you can change the display to show the counter reading, preset position*, clock time or tape remaining time.

* Preset position is not displayed during playback.

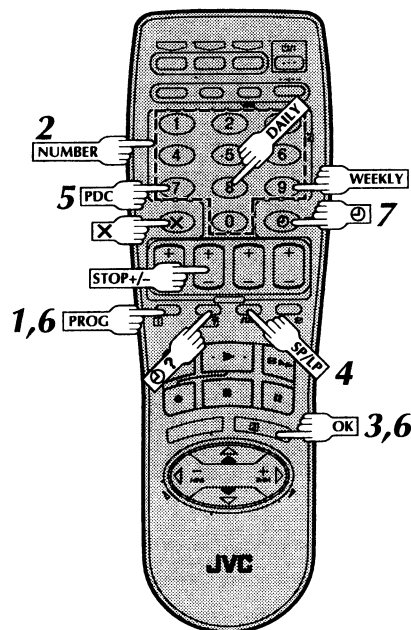
NOTE:

Depending on the type of tape used, there may be times when the tape remaining time reading may not appear right away, or is not correct. "-- --" may sometimes appear, or the display may blink on occasion.

Video Plus+ Timer Programming

Before performing Video Plus+ Timer Programming:

- Make sure that the recorder's built-in clock is set properly.
- Insert a cassette with the safety tab in place. The recorder will come on automatically.
- Turn on the TV and select the VIDEO channel (or AV mode).



With Video Plus+, timer programming is greatly simplified because each TV programme has a corresponding code number which your recorder is able to recognise.

1 ACCESS VIDEO PLUS+ SCREEN

Press **PROG**.



The front display panel looks like this:

2 ENTER PLUSCODE NUMBER

Press the **NUMBER** keys to enter the PlusCode number of the programme you wish to record.



- If you make a mistake, press **X** and input the correct number.

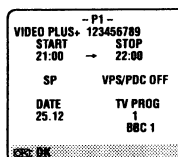
The PlusCode number you enter appears on the front display panel:



The display panel shows only a 4-digit number.

3 ACCESS VIDEO PLUS+ PROGRAM SCREEN

Press **OK**, and the Video Plus+ Program screen appears (if you're just starting out, "P1" appears).



The display panel shows the programme start time. Pressing **?** changes the display to the programme stop time, then the date and preset position.



IMPORTANT

Make sure the preset position number you wish to record is displayed; if not, see "Video Plus+ Setup" on page 48 and set the Guide Program number for that PlusCode number correctly.

- If the number you entered is invalid, "ERROR" appears on the screen and "Err" appears on the display panel. Press **X** and input a valid PlusCode number.
- If the "GUIDE PROG SET" screen appears, see "ATTENTION - Regarding Guide Program Number Set" on page 15.

4 SET TAPE SPEED

Press **SP/LP** (**1/11**) to set the tape speed.

5 SET PDC MODE

Press **PDC** to select "ON" or "OFF".
If "VPS/PDC ON" is displayed on the screen or "VPS/PDC" is lit on the display panel, PDC is set to ON.
If "VPS/PDC OFF" is displayed on the screen or "VPS/PDC" is not lit on the display panel, PDC is set to OFF.
☐ "PDC Recording" in the column below.

- VPS (Video Programme System) recording is not currently available in the U.K. and not possible with this recorder.

6 RETURN TO NORMAL SCREEN

Press **PROG** or **OK**. "PROGRAM COMPLETED" appears on the screen for about 5 seconds, then normal screen appears.

- Repeat steps 1 - 6 for each additional programme.

7 ENGAGE RECORDER'S TIMER MODE

Press **⊖** (**TIMER**). The recorder turns off automatically and **⊖** appears on the display panel.

- To disengage the timer, press **⊖** (**TIMER**) again.

NOTES:

- To Change The Stop Time . . .
... press **STOP** +/- after pressing **OK** in step 3. You can compensate for anticipated programme schedule delays this way.
- To Timer-Record Weekly Or Daily Serials . . .
... after pressing **OK** in step 3, press **WEEKLY** (**NUMBER** key "9") for weekly serials or **DAILY** (**NUMBER** key "8") for daily serials (Monday - Friday). Either "WEEKLY" or "DAILY" appears on the screen. Pressing the button again makes the corresponding indication disappear.
- You can programme this recorder to timer-record as many as 8 programmes. If you try to programme the recorder to record a ninth, "PROGRAM FULL" appears on screen and "FULL" appears on the front display panel. To record the extra programme, you must first cancel any unnecessary programmes (see pg. 18).
- It is not possible to timer-record a TV programme with a PlusCode number which starts with "0".

PDC Recording

Now available from some TV stations, PDC (Programme Delivery Control) is a service designed to assure safe, accurate timer recording. With this system, special code signals are transmitted together with the audio/video signals. These code signals control your video recorder and have precedence over the advertised times which you may have preset into the timer. This means that your recorder will start and stop recording when the preset TV programmes actually start and end — even if the broadcast time of a preset TV programme is changed from what has been advertised. PDC is currently available nationally on BBC1, BBC2, Ch.4 and Ch.5, except from a few small relay transmitters. Ch.3 operates a PDC service only in a very few areas. All channels intend to offer this service in due course. Check your TV programme listing guide for latest information. If the channel you intend to record does not offer a PDC service your recorder will not start recording if PDC has been selected. Be sure to set PDC to "OFF" if PDC is not available on your selected channel (see step 5 above).

NOTES:

- PDC recording is also possible when a satellite receiver or a cable system is connected to AV2 IN on your recorder.
- PDC recording is also possible via the AV1 IN/OUT connector and the front panel connectors.

Satellite Receiver Users

To timer-record a satellite broadcast using Video Plus+:

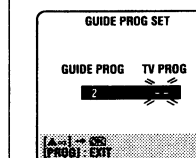
- 1 Set "AV2 SELECT" to the appropriate mode. ☐ pg. 33
- 2 Perform steps 1 - 7.
- 3 Set the satellite receiver to the appropriate channel before the selected programme begins.
- 4 Leave the satellite receiver's power on.

ATTENTION

Regarding Guide Program Number Set

"GUIDE PROG SET" appears after performing step 3 if the Guide Program number for the PlusCode number you entered has not been set.

- Press the **NUMBER** keys or **Δ**/**∇** to input the preset position number on which your recorder receives that station, then press **OK** or **▷**. The Video Plus+ Program screen appears.



(Ex.) To timer-record a BBC2 programme with Video Plus+.
* If your recorder receives BBC2 on the preset position 2, press **OK** or **▷** after entering "2".

Timer Warning

If you have programmed your recorder to timer-record a programme or a series of programmes, a warning appears on the screen to tell you that the recording is due to start in 5 minutes.

— WARNING —
TIMER RECORDING
TO START SOON
[X]

NOTES:

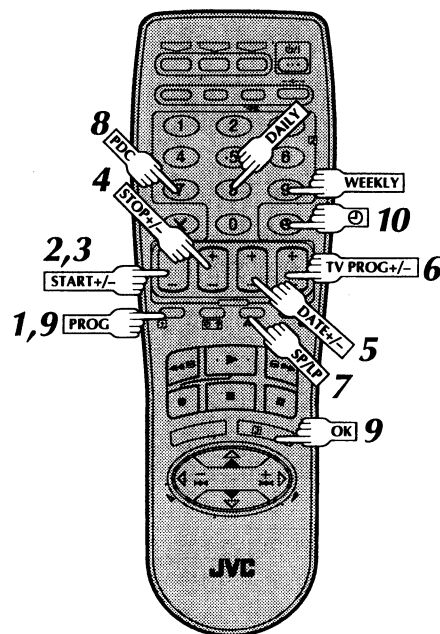
- The warning only appears if you're not in the Timer mode at the time.
- If this recorder is being used as the player for tape dubbing, the warning screen will be recorded on the tape in the other video recorder.

The warning blinks for the entire 5 minutes leading up to the start of timer recording. To clear the display, press **X**.

Express Timer Programming

Before performing Express Timer Programming:

- Make sure that the recorder's built-in clock is set properly.
- Insert a cassette with the safety tab in place. The recorder will come on automatically.
- Turn on the TV and select the VIDEO channel (or AV mode).



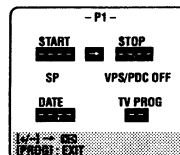
If you don't know the PlusCode number for the programme you wish to record, use the following procedure to set your recorder to timer-record the programme.

ACCESS VIDEO PLUS+ SCREEN

Press **PROG**.

ACCESS PROGRAMME SCREEN

Press **START +/-**. (If you're just starting out, "P1" appears.)



The front display panel looks like this:

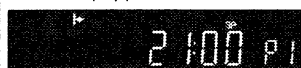


ENTER PROGRAMME START TIME

Press **START +/-** to enter the time you want recording to start.

- Press and hold **START +/-** to move in 30-minute increments, or press and release repeatedly to move 1 minute at a time.

The front display panel looks like this:



ENTER PROGRAMME STOP TIME

Press **STOP +/-** to enter the time you want recording to stop.

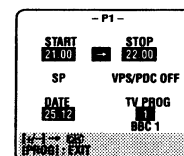
- Press and hold **STOP +/-** to move in 30-minute increments, or press and release repeatedly to move 1 minute at a time.

ENTER PROGRAMME DATE

Press **DATE +/-** to enter the date on which you wish to record. (The current date first appears on screen. The date you enter will appear in its place.)

ENTER PRESET POSITION

Press **TV PROG +/-** to enter the preset position corresponding to the broadcasting station you wish to record.



SET TAPE SPEED

Press **SP/LP (///)** to set the tape speed.

SET PDC MODE

Press **PDC** to select "ON" or "OFF". If "VPS/PDC ON" is displayed on the screen or "VPS/PDC" is lit on the display panel, PDC is set to ON. If "VPS/PDC OFF" is displayed on the screen or "VPS/PDC" is not lit on the display panel, PDC is set to OFF. (See "PDC Recording" in the right column.)

- VPS (Video Programme System) recording is not currently available in the U.K. and not possible with this recorder.

RETURN TO NORMAL SCREEN

After confirming all information is correct, press **PROG** or **OK**. "PROGRAM COMPLETED" appears on the screen for about 5 seconds, then normal screen appears.

- Repeat steps 1 – 9 for each additional programme.

ENGAGE RECORDER'S TIMER MODE

Press **⏻ (TIMER)**. The recorder turns off automatically and **⏻** appears on the display panel.

- To disengage the timer, press **⏻ (TIMER)** again.

To Timer-Record Weekly Or Daily Serials . . .
... anytime during steps 2 through 9, press **WEEKLY (NUMBER key "9")** for weekly serials or **DAILY (NUMBER key "8")** for daily serials (Monday – Friday). Either "WEEKLY" or "DAILY" appears on the screen. Pressing the button again makes the corresponding indication disappear.

NOTE:

You can programme this recorder to timer-record as many as 8 programmes. If you try to programme the recorder to record a ninth, "PROGRAM FULL" appears on screen and "FULL" appears on the front display panel. To record the extra programme, you must first cancel any unnecessary programmes (see pg. 18).

Satellite Receiver Users

- To timer-record a satellite broadcast using Express Timer Programming:
- 1 Set "AV2 SELECT" to the appropriate mode. (see pg. 33)
 - 2 Perform steps 1 – 10. Enter "L-2" for the preset position in step 6.
 - 3 Set the satellite receiver to the appropriate channel before the selected programme begins.
 - 4 Leave the satellite receiver's power on.

PDC Recording

Now available from some TV stations, PDC (Programme Delivery Control) is a service designed to assure safe, accurate timer recording. With this system, special code signals are transmitted together with the audio/video signals. These code signals control your video recorder and have precedence over the advertised times which you may have preset into the timer. This means that your recorder will start and stop recording when the preset TV programmes actually start and end — even if the broadcast time of a preset TV programme is changed from what has been advertised. PDC is currently available nationally on BBC1, BBC2, Ch.4 and Ch.5, except from a few small relay transmitters. Ch.3 operates a PDC service only in a very few areas. All channels intend to offer this service in due course. Check your TV programme listing guide for latest information. If the channel you intend to record does not offer a PDC service your recorder will not start recording if PDC has been selected. Be sure to set PDC to "OFF" if PDC is not available on your selected channel. (See step 8 in the left column.)

NOTES:

- Set the start time (PDC time) exactly as advertised in the TV listing. A different time than advertised will result in no recording.
- PDC recording is also possible when a satellite receiver or a cable system is connected to AV2 IN on your recorder.
- PDC recording is also possible via the AV1 IN/OUT connector and the front panel connectors.

Timer Warning

If you have programmed your recorder to timer-record a programme or a series of programmes, a warning appears on the screen to tell you that the recording is due to start in 5 minutes.

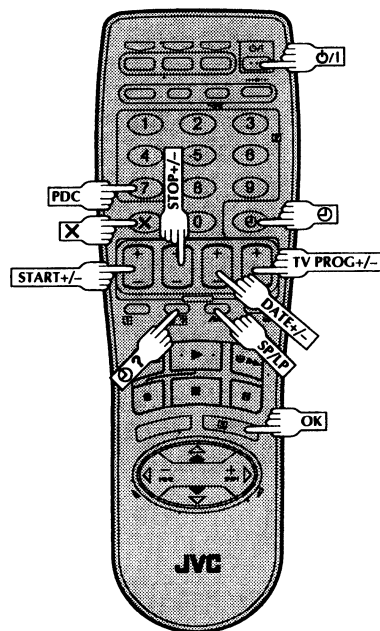
— WARNING —
TIMER RECORDING
TO START SOON
[X]

NOTES:

- The warning only appears if you're not in the Timer mode at the time.
- If this recorder is being used as the player for tape dubbing, the warning screen will be recorded on the tape in the other video recorder.

The warning blinks for the entire 5 minutes leading up to the start of timer recording. To clear the display, press **X**.

Check, Cancel And Replace Programmes



1

DISENGAGE TIMER MODE

Press $\odot$, then press $\odot$ /I.

2

ACCESS PROGRAMME CHECK SCREEN/DISPLAY

Press $\odot$?.

PR	START	STOP	CH	DATE
1	8:00	10:00	3	24.12
2	10:00	10:45	2	25.12
3	11:30	13:00	1	25.12
4				
5				
6				
7				
8				

$\odot$? : NEXT

3

ACCESS PROGRAMME SCREEN/DISPLAY

Press $\odot$? again to check more information. Each time you press $\odot$?, the next programme's information appears.

- P1 -	
START 8:00	STOP 10:00
SP	VPS/PDC OFF
DATE 24.12	TV PROG 3
TVV	

$\odot$? : NEXT

• The display panel shows the programme start time. Pressing **OK** changes the display to the programme stop time, then the date and the preset position.

To cancel or replace a programme...

4

CANCEL OR REPLACE A PROGRAMME

Press **X** to cancel a programme. To replace a programme, press the appropriate button: **START+/-**, **STOP+/-**, **DATE+/-**, **TV PROG+/-**, **SP/LP (P/LP)**, **PDC**.

5

RETURN TO NORMAL SCREEN/DISPLAY

Press $\odot$? as many times as necessary. If there are still some programmes to be recorded, go on to step 6.

6

RETURN TO TIMER MODE

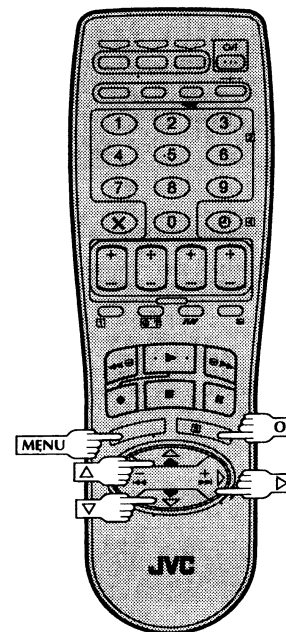
Press $\odot$.

NOTE:

You can also check the programmes on the display panel even when the recorder's power is off or the recorder is in the Timer mode. However, it is not possible to cancel or replace the programmes.

Recording According To Tape Type

Turn on the TV and select the VIDEO channel (or AV mode).



S-VHS (Super VHS) and VHS

Your recorder can record in either S-VHS or VHS.

To record in S-VHS:

Perform the steps 1 - 4 below to set "S-VHS" to "AUTO". Then, insert a cassette marked "S-VHS", the S-VHS indicator will light on the display panel. The S-VHS recording mode will be selected.

To record in VHS:

Insert a cassette marked "VHS". The VHS recording mode will be automatically selected regardless of the S-VHS mode setting.

To record in VHS on an S-VHS cassette:

Insert the cassette marked "S-VHS", the S-VHS indicator will light on the display panel. Then, perform the steps 1 - 4 below to set the "S-VHS" to "OFF"; the S-VHS indicator will go out. The VHS recording mode will be selected.

1

ACCESS MAIN MENU SCREEN

Press **MENU**.

2

ACCESS MODE SET SCREEN

Move the highlight bar (pointer) to "MODE SET" by pressing Δ or ∇ , then press **OK** or $\triangleright$.

MAIN MENU	
LP MODE SET	
AUTO CH SET	
MANUAL CH SET	
INITIAL SET	
Δ : ∇ : $\triangleright$: $\triangleleft$: $\odot$: EXIT	

3

SELECT S-VHS MODE

Move the highlight (pointer) to "S-VHS" by pressing Δ or ∇ , then press **OK** or $\triangleright$ to select "AUTO" or "OFF".

MODE SET	
AUTO TIMER	OFF
O. S. D.	ON
B. E. S. T.	ON
AUTO SP - LP TIMER	OFF
EDIT	OFF
AV2 SELECT	VIDEO
Δ : ∇ : $\triangleright$: $\triangleleft$: $\odot$: EXIT	

4

RETURN TO NORMAL SCREEN

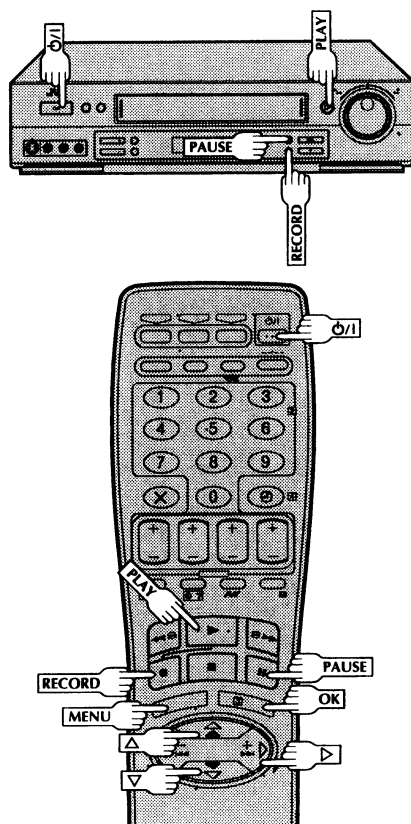
Press **MENU**.

NOTE:

When playing back a tape that has been recorded in S-VHS, the S-VHS indicator lights on the display panel regardless of the "S-VHS" mode setting.

Playback/ Recording According To Tape Characteristics

Turn on the TV and select the VIDEO channel (or AV mode).



B.E.S.T. Picture System

The B.E.S.T. (Biconditional Equalised Signal Tracking) system checks the condition of the tape in use during recording and playback, and compensates to provide the highest-possible recording and playback pictures. The default setting for both recording and playback is "ON".

1 TURN ON THE RECORDER

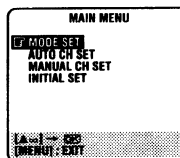
Press ϕ/I .

2 ACCESS MAIN MENU SCREEN

Press MENU.

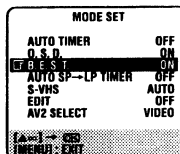
3 ACCESS MODE SET SCREEN

Press $\Delta \nabla$ to move the highlight bar (pointer) to "MODE SET", then press OK or $\triangleright$.



4 SELECT B.E.S.T. MODE

Press $\Delta \nabla$ to move the highlight bar (pointer) to "B.E.S.T.", then press OK or $\triangleright$ to set to "ON" or "OFF".



5 RETURN TO NORMAL SCREEN

Press MENU.

Recording

START RECORDING

Press and hold RECORD and press PLAY on the remote, or press RECORD on the recorder.

DURING B.E.S.T.



B.E.S.T. COMPLETE



- The recorder spends approximately 7 seconds assessing the condition of the tape, then begins recording.

NOTES:

- The B.E.S.T. system works for both SP and LP modes only after a tape has been inserted and the Record mode is first initiated. It does not work during recording.
- The B.E.S.T. system does not work while Auto Satellite Prog recording is in progress (pg. 26).
- In the case of timer recording, the B.E.S.T. system works before recording is initiated.
- Once the cassette is ejected, the B.E.S.T. data is cancelled. The next time the cassette is used for recording, B.E.S.T. is re-performed.
- Pressing the recorder's RECORD button while "BEST" is displayed does not start Instant Timer Recording (pg. 13).

ATTENTION

Since the B.E.S.T. system works before recording actually starts, there is a delay of approximately 7 seconds after RECORD and PLAY on the remote are pressed, or RECORD on the recorder is pressed. To make sure you record the desired scene or programme in its entirety, first perform the following steps:

- Press and hold PAUSE and press RECORD to engage the RECORD PAUSE mode.
 - The recorder then automatically checks the condition of the tape and, after approximately 7 seconds, re-enters RECORD PAUSE.
- Press PLAY when you are ready to start recording.
 - If you want to bypass the B.E.S.T. system and begin recording immediately, set "B.E.S.T." to "OFF" in step 4 on page 20.

Playback

The recorder assesses the quality of the tape once you initiate playback.

START PLAYBACK

Press PLAY.

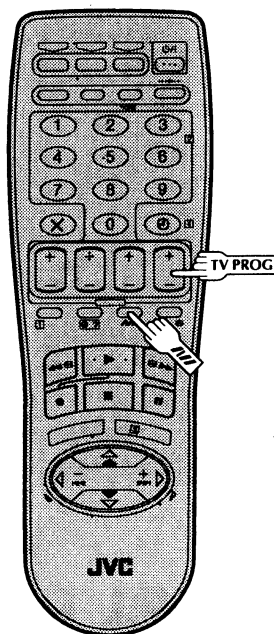
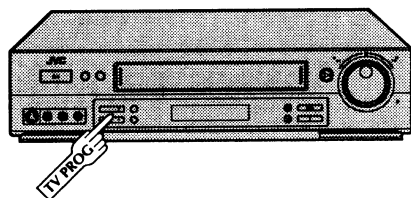


- The recorder adjusts the playback picture quality based on the quality of the tape in use.
- B.E.S.T. is active during Auto Tracking. "BEST" appears blinking on the recorder's display panel.

NOTES:

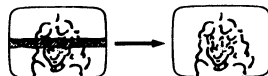
- When watching a tape recorded with "B.E.S.T." set to "ON", it is recommended that you leave B.E.S.T. on during playback as well.
- When watching a rental tape or one recorded on another video recorder, or when using this recorder as the player for editing, set B.E.S.T. to your preference by performing steps 1 through 5 on page 20.
- "BEST" only appears at the beginning of automatic tracking. Even though it doesn't appear after that, the B.E.S.T. function is operative.

Playback Picture Adjustment



Manual Tracking

Your video recorder is equipped with automatic tracking control. For most tapes this will automatically adjust the tracking to suit the particular tape you are playing. In some circumstances it may be necessary to make manual tracking adjustments. This is usually only associated with old or worn tapes or recordings made on old or worn recorders. If the automatic tracking control fails to operate correctly you will see noise bars across the picture as shown on the left below. To correct this you can override the automatic control and adjust the tracking manually by pressing the **TV PROG** buttons.



1

1 OVERRIDE AUTOMATIC TRACKING

Press **TV PROG** on the remote to engage manual tracking.

2

2 ADJUST TRACKING MANUALLY

Press **TV PROG** + or - to adjust tracking.

3

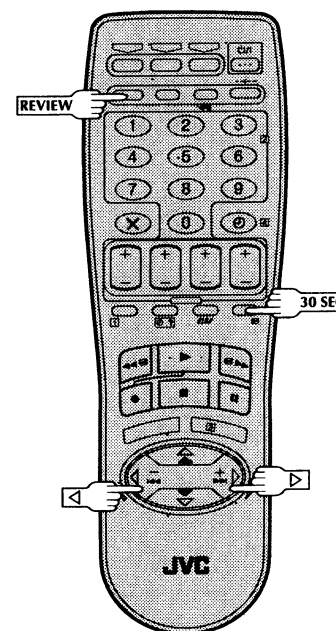
3 RETURN TO AUTOMATIC TRACKING

Press **TV PROG** on the remote to re-engage automatic tracking.

NOTE:

When a new tape is inserted, the recorder returns to the automatic tracking mode automatically.

Looking For The Scene You Want

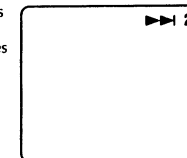


Index Search

Your recorder automatically marks index codes at the beginning of each recording. This function gives you quick access to any one of 9 index codes in either direction.

NOTE:

Before starting, make sure the recorder is in the **Stop** mode.



1 ACTIVATE INDEX SEARCH

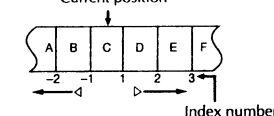
Press **<** or **>** (**<<<** or **>>>**). "**<<< 1**" or "**>>> 1**" is displayed on screen and search begins in the corresponding direction.

- To access index codes 2 through 9, press **<** or **>** repeatedly until the correct index number is displayed.

Ex.: To locate the beginning of B from the current position, press **<** twice.

To locate the beginning of D from the current position, press **>** once.

Current position



- When the specified index code is located, playback begins automatically.

Instant ReView

Simply by pressing a single button, the recorder power comes on, rewinds, and begins playback of the last timer-recorded programme. If you have several programmes recorded, you can easily access any of them.

NOTE:

Before starting, make sure that the recorder is off and that the **Timer** mode is disengaged.

1 ACTIVATE INSTANT REVIEW

Press **REVIEW**. The recorder power comes on and the recorder searches for the index code indicating the start of the last timer-recorded programme. Once it's found, playback begins automatically.

- The front display panel tells you how many programmes have been timer-recorded. If you have, for example, 3 programmes, "**REVIEW**" and "**3**" appear and blink. To watch the first of the 3 programmes, press **REVIEW** three times. The recorder searches and begins playback automatically. You can access a programme as far as 9 index codes away from the current tape position.

NOTES:

- Instant ReView** is not possible while the recorder is in the **Timer** mode.
- The number of recorded programmes will not be displayed on the front display panel after **Auto Satellite Prog** recording (see pg. 26).

Skip Search

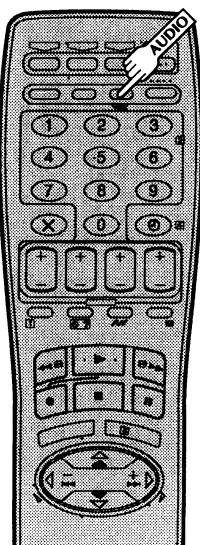
1 SKIP OVER UNWANTED SECTIONS

Press **30 SEC** 1 to 4 times during playback. Each press initiates a 30-second period of fast-motion playback. Normal playback resumes automatically.

NOTE:

To return to normal playback during a **Skip Search**, press **PLAY**.

Selecting The Sound You Want



Receiving NICAM Stereo And Bilingual Programmes

Your recorder is equipped with a Digital stereo sound decoder (NICAM), making reception of stereo and bilingual broadcasts possible.

When the recorder is tuned to a different station, the type of broadcast being received will be displayed on the TV screen for a few seconds.

Type of Broadcast Being Received	On-screen Display
Regular Monaural	(none)
NICAM Stereo	ST NICAM
NICAM Bilingual	BIL NICAM
NICAM Monaural	NICAM

- To listen to a stereo programme, press **AUDIO** until "ST" and "HI FI" appear on the front display panel or "HI FI L" and "HI FI R" appears on the screen.
- To listen to a bilingual programme, press **AUDIO** until either "BIL" or "ST" appears on the front display panel or "HI FI L" and "HI FI R" appears on the screen (as required).
- To listen to the Standard (regular monaural) audio while receiving a NICAM broadcast, press **AUDIO** until "NORM" appears on the front display panel or on the screen.

NOTES:

- The NICAM audio programme will be recorded on the Hi-Fi audio track, and the Standard audio programme on the normal audio track.
- If the quality of stereo sound being received is poor, the broadcast will be received in monaural with better quality.
- Before playing back a programme recorded in stereo, or a bilingual programme, refer to "Soundtrack Selection" (See below).
- "O.S.D." must be set to "ON" or the on-screen displays will not appear (pg. 34).

Soundtrack Selection

Your video recorder is capable of recording three soundtracks (HI-FI L, HI-FI R and NORM) and will play back the one you select.

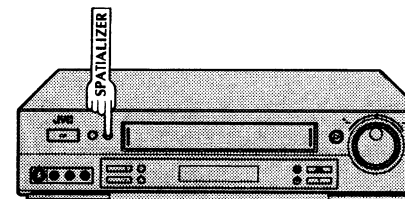
During Playback

Pressing **AUDIO** on the remote control changes the soundtrack being played back as follows:

TRACK		USE
Recorder's Front Panel	On-Screen Display	
[HI FI L] + [HI FI R]	HI FI L HI FI R	For Hi-Fi stereo tapes
[HI FI L]	HI FI L	For main audio of Bilingual tapes
[HI FI R]	HI FI R	For sub audio of Bilingual tapes
NORM	NORM	For audio-dubbed tapes
[HI FI L] + [HI FI R] + NORM	HI FI L HI FI R NORM	For audio-dubbed tapes

NOTES:

- "[HI FI L] + [HI FI R]" should normally be selected. In this mode, Hi-Fi stereo tapes are played back in stereo, and the normal audio track is played back automatically for tapes with only normal audio.
- For instructions on recording NICAM stereo and bilingual programmes (See above).
- Bilingual programmes are not currently broadcast in the U.K.
- "O.S.D." must be set to "ON" or the on-screen displays will not appear (pg. 34).



Spatializer®

This feature expands the sound field when you play back any stereo source or view a stereo programme while recording it. *Spatializer® has no effect on recording quality.

1 ACTIVATE SPATIALIZER®

Press **SPATIALIZER**; the current setting will be displayed on the screen for about 5 seconds. Pressing **SPATIALIZER** while the screen shows the display changes the setting.

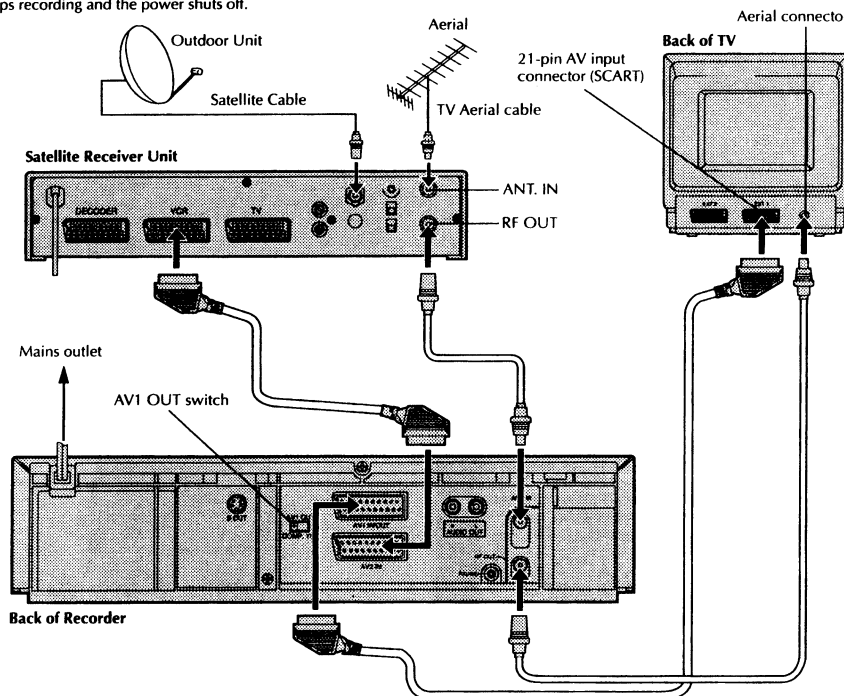
- To view a stereo programme such as movies or music, select "SPATIALIZER" to create more spacious sound.
- To view a monaural programme, select "SPATIALIZER → ST" which simulates a stereo effect.
- Select "SPATIALIZER OFF" to turn off Spatializer® if the sound becomes unnatural with either "SPATIALIZER" or "SPATIALIZER → ST" selected.
- If your TV is equipped with 3D-PHONIC and if you use both Spatializer® and 3D-PHONIC at the same time, the sound may become unnatural; set either function to "OFF".
- The setting will remain effective even though you turn on/off the recorder.

NOTES:

- Spatializer® is effective only with a stereo TV.
- You can change the Spatializer® setting even though "O.S.D." is set to "OFF".
- The setting cannot be changed during search, still, frame-by-frame playback or slow motion mode.
- When this recorder is used as the player for editing, the recorded audio will correspond to the Spatializer® setting.

Automatic Satellite Programme Recording

This facility allows you to record automatically a satellite programme which is timer-programmed on your external satellite receiver. Connect a satellite receiver to the recorder's AV2 IN connector and programme the timer on the satellite receiver; the recorder starts recording when the signals input from the satellite receiver to the AV2 IN connector, and when there is no input signals the recorder stops recording and the power shuts off.



IMPORTANT

Set "AV2 SELECT" to "SAT" on the Mode Set screen in step 3 of page 27.

If you set "AV2 SELECT" to "SAT"...

- It is possible to view a satellite programme with the TV set to its AV mode even if the recorder's power is turned off as long as the recorder is **not** in the Timer mode.
- The AV2 IN connector's input is the same signal that is controlled by the rear panel AV1 OUT switch as shown below:
 - If both the satellite receiver and the TV are compatible with the Y/C signal, set the AV1 OUT switch to Y/C in order to take advantage of high-quality S-VHS pictures.
 - If the satellite receiver and/or the TV are/is not compatible with the Y/C signal, set the AV1 OUT switch to COMP.

AV2 SELECT setting on the MODE SET screen	Rear panel AV1 OUT switch	AV2 IN connector input signal
SAT	COMP.	Composite signal*
	Y/C	Y/C signal**

* The composite signal is a regular video signal.

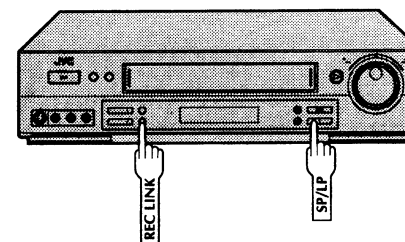
** The Y/C signal is a signal in which the luminance and chrominance signals are separated.

NOTE:

Refer to the instructions supplied with your satellite receiver.

Before performing the following steps:

- Make sure the satellite receiver is connected to the recorder's AV2 IN connector. (☞ pg. 26)
- Programme the timer on the satellite receiver.
- Insert a cassette with the safety tab in place.



ATTENTION

- Be sure not to turn on the satellite receiver before the programme is executed; otherwise, the recorder will start recording when the satellite receiver's power is turned on.
 - If you have connected another appliance other than a satellite receiver to the AV2 IN connector, be sure not to engage the Auto Satellite Prog Rec mode; otherwise, the recorder will start recording when the connected appliance's power is turned on.
 - Auto Satellite Prog recording and timer-recording cannot be done at the same time.
 - When you press and hold the recorder's REC LINK button to engage the Auto Satellite Prog Rec mode, if the REC LINK button does not light but instead blinks quickly even though your satellite receiver's power is off, Auto Satellite Prog Recording will not work properly with that satellite receiver*.
- If this is the case, perform "Express Timer Programming" (☞ pg. 16) to timer-record a satellite programme.
- * Some satellite receivers output signals even if the power is off. Auto Satellite Prog Recording is not possible with those satellite receivers.

ACCESS MAIN MENU SCREEN

Press MENU.

ACCESS MODE SET SCREEN

Move the highlight bar (pointer) to "MODE SET" by pressing Δ / ∇ , then press OK or $\triangleright$.

SELECT AV2 SELECT MODE

Move the highlight bar (pointer) to "AV2 SELECT", by pressing Δ / ∇ , then press OK or $\triangleright$ to set to "SAT".

MODE SET	
AUTO TIMER	OFF
O.S.D.	ON
B.E.S.T.	ON
AUTO SP-LP TIMER	OFF
S-VHS	AUTO
EDIT	ON
AV2 SELECT	SAT

SET TAPE SPEED

Press SP/LP (//) to set the tape speed.

ENGAGE AUTO SATELLITE PROG REC MODE

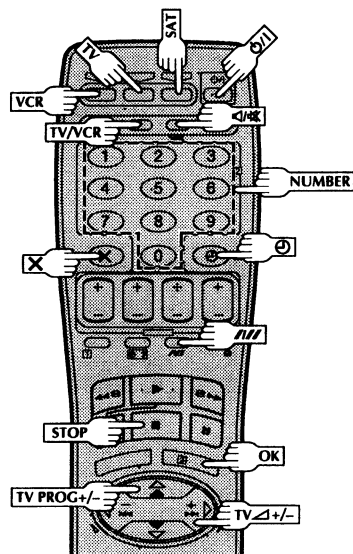
Press and hold REC LINK for about 2 seconds. The button lights up and the recorder turns off automatically.

- To disengage the Auto Satellite Prog Rec mode, press REC LINK. The light goes off.
- If the recorder's power is off, it is not possible to engage the Auto Satellite Prog Rec mode.

NOTES:

- Auto Satellite Prog recording is possible with the AV2 IN connector only.
- When the Auto Satellite Prog Rec mode is engaged or the recorder's power is turned off after Auto Satellite Prog recording is finished, the recorder will not enter the Timer mode even though "AUTO TIMER" is set to "ON".
- After Auto Satellite Prog recording, the number of recorded programmes will not be displayed on the front display panel for the Instant ReView function (☞ pg. 23).
- For timer programming of the satellite receiver, refer to the instruction manual of the satellite receiver.
- Auto Satellite Prog recording is not possible if your satellite receiver does not have a timer.
- The REC LINK button blinks while Auto Satellite Prog recording is in progress.
- Pressing the recorder's Ψ button while Auto Satellite Prog recording is in progress turns off the recorder's power and disengages the Auto Satellite Prog Rec mode.
- If there is more than one satellite programme you wish to record with Auto Satellite Prog Recording, it is not possible to set a different tape speed for each; the tape speed selected in step 4 will apply to all the programmes for Auto Satellite Prog recording.
- The B.E.S.T. system (☞ pg. 20) does not work while Auto Satellite Prog recording is in progress.
- Just Clock (☞ pg. 47) does not work when the Auto Satellite Prog Rec mode is engaged.
- Depending on the type of satellite receiver, the recorder may not record a short portion at the beginning of the programme or may record slightly longer than the actual length of the programme.
- If you engage the Auto Satellite Prog Rec mode when the satellite receiver's power is on, the recorder will not start Auto Satellite Prog recording even though the REC LINK button blinks. When the satellite receiver shuts off once and is turned back on again, the recorder starts recording.
- You can also record a programme from your cable system in the same way if the system has a timer and is connected to the recorder's AV2 IN connector.

Remote Control Functions



ATTENTION

The remote control can operate not only the video recorder but also some of your TV and satellite receiver's functions.

- To operate your video recorder, first press the **VCR** button to set the remote control to the Video mode.
- To operate your TV, first press the **TV** button to set the remote control to the TV mode.
- To operate your satellite receiver, first press the **SAT** button to set the remote control to the Satellite Receiver mode.

Control Your TV Using Additional Buttons

Use the **NUMBER** keys, and the **///** button, **X** button or **⊙** button to select the TV's channel.

- With televisions under Code 01, 02, 03, 04, 05, 06, 07, 09, 10, 13, 14, 22, 23 or 25, the **///** button corresponds to the 1-digit/2-digit entry switching button (often labelled **-/-**) of your TV's remote control.
- With televisions under Code 01, 11 or 12, the **X** button corresponds to the 10 + button, and the **⊙** button corresponds to the 20 + button of your TV's remote control.

NOTE:

The way these buttons are used is determined by your TV. Use these buttons as instructed for your TV's remote control.

TV Multi-brand Remote Control

Your remote control can operate the basic functions of your TV set. In addition to JVC TVs, other manufacturer's TVs can also be controlled.

Before you start . . .

- Turn on the TV using its remote control.

1 SET TV BRAND CODE

Refer to the chart below. While holding down **TV** on the recorder's remote control, enter your TV's brand code using the **NUMBER** keys, then press **STOP**. Check if the TV's power goes off as it should. If it does, try other operations (⇨ step 2).

- Once you have set the remote control to operate the TV, you don't have to repeat this step until you replace your remote control's batteries.
- JVC or SAMSUNG has more than one code. If the TV does not function with one code, try entering another.

2 OPERATE TV

First, press **TV** to set the remote control to TV mode, then press the corresponding button: **⏻**, **TV PROG +/-**, **TV/VCR**, **TV Δ +/-** (Volume), **⏻** (Muting), **NUMBER** keys.

- For some brands of TV, you must press **OK** after having pressed the **NUMBER** keys.

IMPORTANT

Although the provided remote control unit is compatible with JVC televisions, as well as many other models, it may not work with your TV, or in some instances, may have limited function capability.

TV BRAND NAME	CODE
JVC	01, 02, 03, 04
BRANDT	05
NORDMENDE	05
SABA	05
TELEAVIA	05
TELEFUNKEN	05
THOMSON	05
FERGUSON	06
PHILIPS	07
SAMSUNG	07, 19, 23, 24, 25
BLAUPUNKT	08
GRUNDIG	08
SONY	09
PANASONIC	10
GRAETZ	11
ITT	11
LUXOR	11
SALORA	11
SELECO	11
MIVAR	12
HITACHI	13
TOSHIBA	14
MITSUBISHI	15
FINLUX	16
NOKIA	17
SHARP	18
FUNAI	20
GOLDSTAR	21
NEC	22

Satellite Receiver Multi-Brand Remote Control

Your remote control can operate the basic functions of your satellite receiver set. In addition to JVC satellite receivers, other manufacturer's satellite receivers can also be controlled.

Before you start . . .

- Turn on the satellite receiver using its remote control.

1 SET SATELLITE RECEIVER BRAND CODE

Refer to the chart below. While holding down **SAT** on the recorder's remote control, enter your satellite receiver's brand code using the **NUMBER** keys, then press **STOP**. Check if the satellite receiver's power goes off as it should. If it does, try other operations (⇨ step 2).

- Once you have set the remote control to operate the satellite receiver, you don't have to repeat this step until you replace your remote control's batteries.
- Some satellite receiver brands have more than one code. If the satellite receiver does not function with one code, try entering another.

2 OPERATE SATELLITE RECEIVER

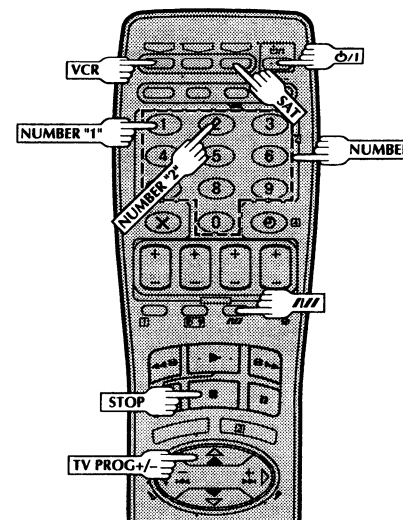
First, press **SAT** to set the remote control to satellite receiver mode, then press the corresponding button: **⏻**, **TV PROG +/-**, **NUMBER** keys.

- For VIDEOWAY or some brands of satellite receiver, you must press **///** after having pressed the **NUMBER** keys.
- The **NUMBER** buttons may not function with some satellite receivers.

IMPORTANT

Although the provided remote control unit is compatible with JVC satellite receivers, as well as many other models, it may not work with your satellite receiver, or in some instances, may have limited function capability.

SATELLITE RECEIVER BRAND	CODE
JVC	13, 14
AMSTRAD	01, 02, 03, 04
GRUNDIG	05, 06
HIRSCHMANN	05
SIEMENS	05
WISI	05
KATHREIN	05, 11, 12
PACE	06, 08
PHILIPS	07
FINLUX	09
ITT	09
NOKIA	09
SALORA	09
RFT	10
SKYMASTER	10
MASPRO	11
BT	13
PANASONIC	15
JERROLD	16
VIDEOWAY	17



Remote A/B Code Switching

The remote control is capable of controlling two JVC video recorders independently; one set to respond to the remote control's A code control signals and another set to respond to B code control signals. The remote control is preset to send A code signals because your video recorder is initially set to respond to A code signals. You can easily modify your video recorder to respond to B code signals.

1 REMOVE POWER SUPPLY

Unplug the mains power cord from the mains outlet.

2 SET REMOTE CONTROL CODE

While holding down **VCR** on the remote control, press the **NUMBER** key "2" and then press **STOP**.

3 RE-SUPPLY POWER

Plug the mains power cord back into the mains outlet.

4 TURN THE RECORDER ON

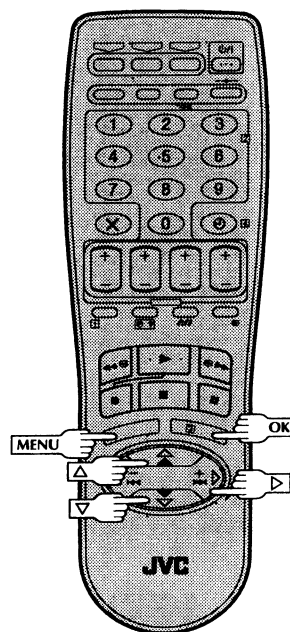
Press **⏻** on the remote control. The recorder will now only respond to B code signals.

NOTES:

- Some TV sets may malfunction in response to the B code. If this happens, switch back to the A code.
- To set the recorder back to respond to A code signals, repeat the same procedure as shown above except pressing **NUMBER** key "1" instead of "2" in step 2.

Minimizing Picture Degradation While Editing

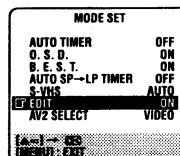
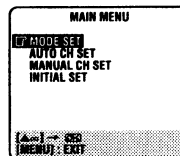
Turn on the TV and select the VIDEO channel (or AV mode).



Editing Mode Setting

Perform the following steps to set "EDIT" to "ON" before you start editing (see pg. 31, 32).

- 1 ACCESS MAIN MENU SCREEN**
Press **MENU**.
- 2 ACCESS MODE SET SCREEN**
Move the highlight bar (pointer) to "MODE SET" by pressing Δ or ∇ , then press **OK** or **▷**.
- 3 SELECT EDIT MODE**
Move the highlight (pointer) to "EDIT" by pressing Δ or ∇ , then press **OK** or **▷** to select "ON".
- 4 RETURN TO NORMAL SCREEN**
Press **MENU**.



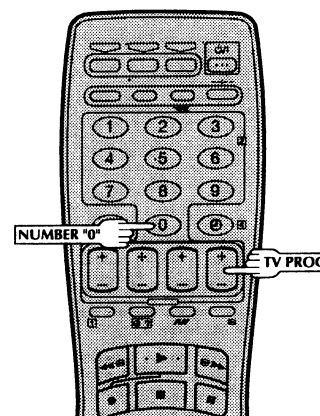
NOTE:

After you finish editing, be sure to set "EDIT" back to "OFF".

Advantages Of S-VHS Video Recorders

- You can edit from VHS to S-VHS, S-VHS to VHS, or from S-VHS to S-VHS.
- From VHS to S-VHS: Record VHS playback signals in the S-VHS mode. Although the picture quality is inherently limited by that of the original, the edited tape has better picture quality than those made by VHS-to-VHS editing.
 - From S-VHS to VHS: Because the picture quality of the source material is very high, the edited tape has better picture quality than those made by VHS-to-VHS editing.
 - From S-VHS to S-VHS: All signals will be transferred without degradation.

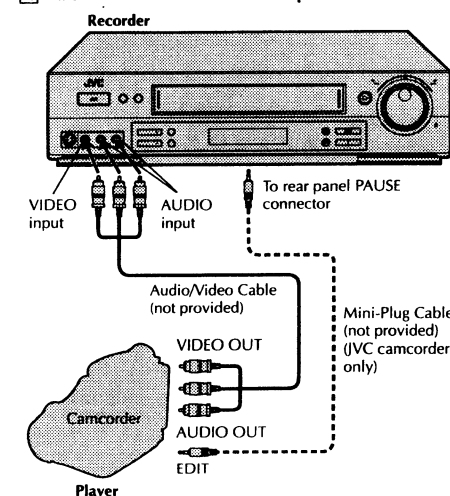
Edit From A Camcorder



NOTES:

- All necessary cables can be obtained from your dealer.
- You can also use another video recorder as the player instead of a camcorder.

A If the camcorder has no S-VIDEO output connector...



You can use a camcorder as the source player and your video recorder as the recorder.

MAKE CONNECTIONS

A If the camcorder has no S-VIDEO output connector... connect the camcorder's AUDIO/VIDEO OUT connectors to the recorder's front panel AUDIO/VIDEO input connectors.

B If the camcorder has an S-VIDEO output connector... connect the camcorder's S-VIDEO OUT and AUDIO OUT connectors to the recorder's front panel S-VIDEO and AUDIO input connectors.

- When using a monaural camcorder, connect its AUDIO OUT connector to the AUDIO L input connector on your recorder.
- When a Master Edit Control-equipped JVC camcorder is used, the camcorder is capable of controlling the recorder. Refer to the camcorder's instruction manual for operating procedure.

SET RECORDER'S INPUT MODE

Press **NUMBER** key "0" and/or **TV PROG** to select "F-1" for the AUDIO/VIDEO input connectors, or "S-1" for the AUDIO/S-VIDEO input connectors, depending on the connectors being used.

SET EDIT MODE

See "Editing Mode Setting" on page 30.

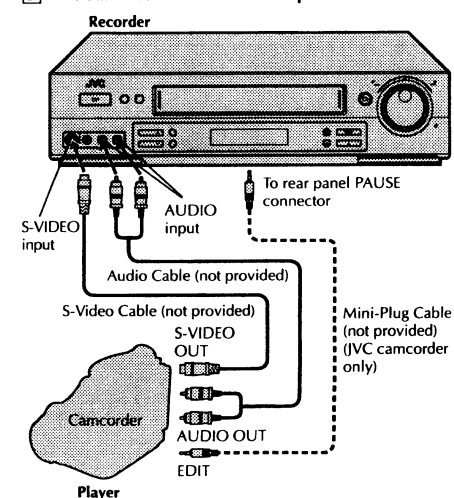
START CAMCORDER

Engage its Play mode.

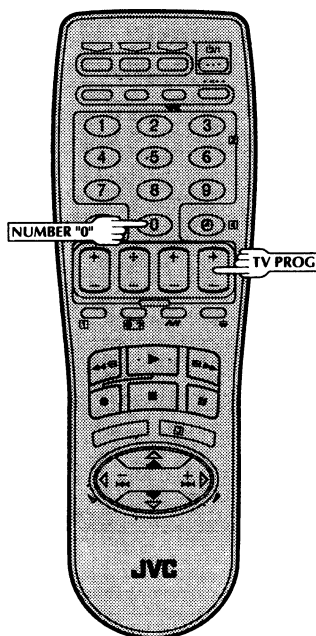
START RECORDER

Engage its Record mode.

B If the camcorder has an S-VIDEO output connector...



Edit To Or From Another Video Recorder



You can use your video recorder as the source player or as the recording deck.

1

MAKE CONNECTIONS

Connect the player's 21-pin SCART connector to the recorder's 21-pin SCART connector as illustrated on page 33.

A When Using Your Video Recorder As The Source Player ... connect its AV1 IN/OUT connector to the recording deck.

B When Using Your Video Recorder As The Recording Deck ... connect its AV2 IN or AV1 IN/OUT connector to the source player.

2

SET RECORDING DECK'S INPUT MODE

Set to AUX. With this video recorder, press NUMBER key "0" and/or TV PROG to select "L-1" for the AV1 IN/OUT connector, or "L-2" for the AV2 IN connector, depending on the connector being used.

• When using the AV2 IN connector, set "AV2 SELECT" to the appropriate mode. pg. 33

3

SET EDIT MODE

See "Editing Mode Setting" on page 30.

4

START SOURCE PLAYER

Engage its Play mode.

5

START RECORDING DECK

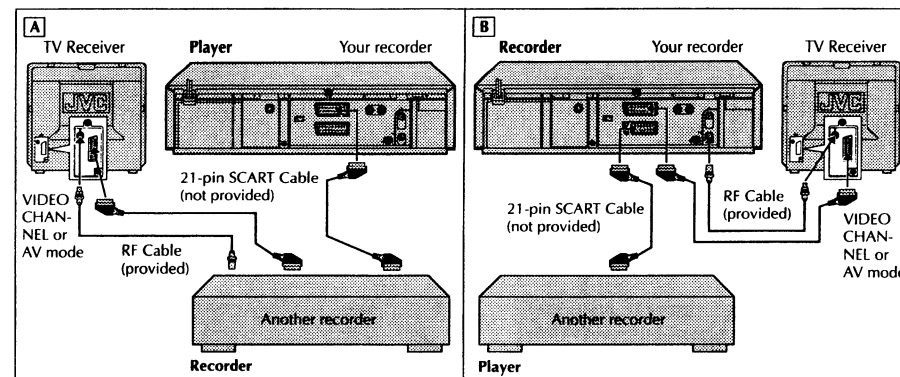
Engage its Record mode.

NOTES:

- All necessary cables can be obtained from your dealer.
- When you use this recorder as the player for editing, be sure to set "O.S.D." to "OFF" before starting pg. 34).
- If you are using another recorder with S-Video and Audio input/output connectors, you can connect those connectors to this recorder's S-VIDEO IN/S OUT and AUDIO IN/OUT connectors.

When Using Your Video Recorder As The Source Player ... connect its rear panel S OUT and AUDIO OUT connectors to the recording deck's S-Video and Audio input connectors.

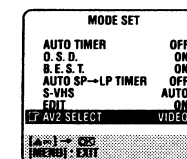
When Using Your Video Recorder As The Recording Deck ... connect its front panel S-VIDEO and AUDIO input connectors to the source player's S-Video and Audio output connectors. Then, set the recorder's input mode to "S-1".



AV2 SELECT Setting

Set "AV2 SELECT" to the appropriate mode depending on the type of unit connected to the rear panel AV2 IN connector of this recorder.

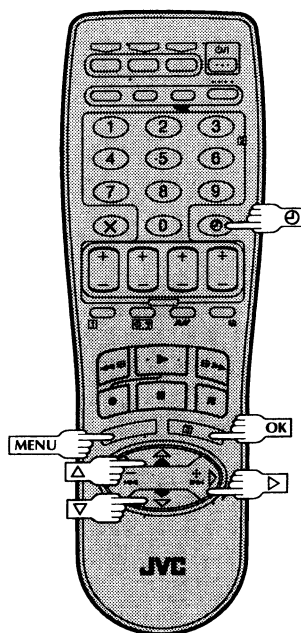
- 1 Press **MENU** to access the Main Menu screen.
- 2 Press $\Delta \nabla$ to move the highlight bar (pointer) to "MODE SET", then press **OK** or $\triangleright$.
- 3 Press $\Delta \nabla$ to move the highlight bar (pointer) to "AV2 SELECT".
- 4 Press **OK** or $\triangleright$ to select one of the following:
 - a-VIDEO : If a connected device's output is compatible only with regular video signals, set "AV2 SELECT" to "VIDEO".
 - b-S-VIDEO : If a connected device's output is compatible with Y/C signals, set "AV2 SELECT" to "S-VIDEO". This setting will let you take advantage of higher-quality S-VHS pictures.
 - c-SAT : If a satellite receiver is connected to the AV2 IN connector, set "AV2 SELECT" to "SAT". (See page 26 as well.)
- 5 Press **MENU** to return to normal screen.



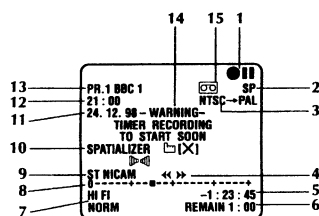
- If you are using a satellite receiver, be sure to set "AV2 SELECT" back to "SAT" after editing.
- If you're not using a satellite receiver, leave "AV2 SELECT" set to "VIDEO" or "S-VIDEO".
- The default setting is "VIDEO"; if the recorder's memory backup has expired due to a power cut or because the AC was removed from the recorder, "VIDEO" will be automatically selected when the power is restored to the recorder. If you are using a satellite receiver, be sure to set "AV2 SELECT" back to "SAT".

Other Functions

Turn on the TV and select the VIDEO channel (or AV mode).



The superimposed indication on the TV screen tells you what the recorder is doing.



On-Screen Display

You can choose whether or not to have various operational indicators appear on screen, by setting this function ON or OFF.

ACCESS MAIN MENU SCREEN

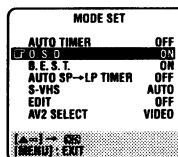
Press MENU.

ACCESS MODE SET SCREEN

Move the highlight bar (pointer) to "MODE SET" by pressing Δ / ∇ , then press OK or $\triangleright$.

ENABLE/DISABLE ON-SCREEN DISPLAY

The default setting is "ON", so if you want on-screen displays, leave the setting as it is and go to step 4. If you don't want the displays to appear, press Δ / ∇ to move the highlight bar (pointer) to "O.S.D." and press OK or $\triangleright$ to set "O.S.D." to "OFF".



RETURN TO NORMAL

Press MENU.

NOTES:

- When you use this recorder as the player for editing, be sure to set "O.S.D." to "OFF" before starting.
- During playback, the operation mode indicators may sometimes be disturbed depending on the type of tape being used.

- 1- Operation mode indicators
- 2- Tape speed SP/LP/EP (EP is for NTSC playback only)
- 3- NTSC playback display (pg. 36)
- 4- Tape direction
- 5- Counter display
- 6- Tape remaining time indicator (pg. 13)
- 7- Audio mode display (pg. 24)
- 8- Tape position indicator (pg. 10)
- 9- NICA display (pg. 24)
- 10- Spatializer* indicator (pg. 25)
- 11- Current day/month/year
- 12- Clock display
- 13- Preset position number and station name/Aux. indicator (L-1, L-2, F-1 or S-1)
- 14- Timer warning display (pg. 15, 17)
- 15- Cassette loaded mark

Auto SP→LP Timer

If, when timer-recording in SP mode, there is not enough tape to record the entire programme, the recorder automatically switches to LP mode to allow complete recording.

For Example . . .

Recording a programme of 210 minutes in length onto a 180-minute tape

Approximately 150 minutes Approximately 60 minutes

SP mode	LP mode
Total 210 minutes	

Make sure you set "AUTO SP→LP TIMER" to "ON" at the Mode Set screen before the timer-recording starts.

ACCESS MAIN MENU SCREEN

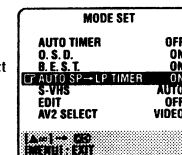
Press MENU.

ACCESS MODE SET SCREEN

Press Δ / ∇ to move the highlight bar (pointer) to "MODE SET", then press OK or $\triangleright$.

SELECT MODE

Press Δ / ∇ to move the highlight bar (pointer) to "AUTO SP→LP TIMER", then press OK or $\triangleright$ to select "ON".



RETURN TO NORMAL SCREEN

Press MENU.

NOTES:

- The Auto SP→LP Timer feature is not available during ITR (Instant Timer Recording), and the feature will not work properly with any tapes longer than E-180 or with some tapes of shorter lengths.
- If you have programmed the recorder to timer-record 2 or more programmes, the second programme and those thereafter may not fit on the tape if you set "AUTO SP→LP TIMER" to "ON". In this case, make sure the mode is not engaged, then set the tape speed manually during timer programming.
- In order to ensure that the recording fits on the tape, this feature may leave a short non-recorded section at the end of the tape.
- There may be some picture noise and sound disturbance at the point on the tape where the recorder switches from SP to LP mode.
- If you perform timer recording with both PDC and the Auto SP→LP Timer activated, and the programme goes beyond its originally scheduled length, there may be times when the programme cannot be recorded in its entirety.

Auto Timer

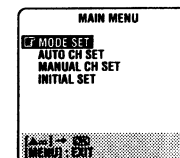
When the Auto Timer is set to ON the timer is automatically engaged when the recorder power is turned off and automatically disengaged when the recorder is powered back on.

ACCESS MAIN MENU SCREEN

Press MENU.

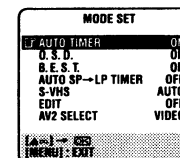
ACCESS MODE SET SCREEN

Press Δ / ∇ to move the highlight bar (pointer) to "MODE SET", then press OK or $\triangleright$.



SELECT MODE

Press OK or $\triangleright$ to select either "ON" or "OFF".



RETURN TO NORMAL SCREEN

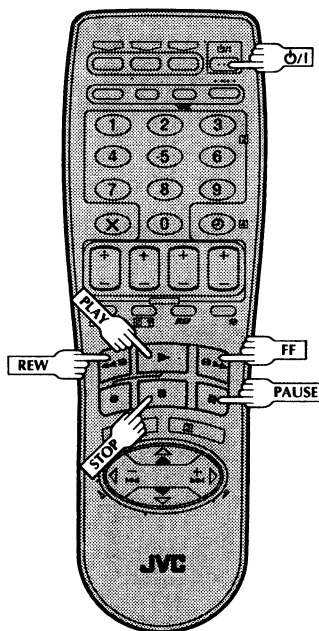
Press MENU.

NOTE:

For safety, when Auto timer is set to "OFF", all other recorder functions are disabled while the Timer mode is engaged. To disengage the timer, press $\odot$ (TIMER).

Repeat Playback

Your video recorder can automatically play back the whole tape 50 times repeatedly.



1 START PLAYBACK

Press **PLAY**.

2 ACTIVATE REPEAT PLAYBACK

Press **PLAY** and hold for over 5 seconds, then release.

- The Play indicator (▶) on the display panel blinks slowly.
- The tape plays 50 times automatically, and then stops.

3 STOP PLAYBACK

Press **STOP** at any time to stop playback.

NOTE:

Pressing **PLAY**, **REW**, **FF** or **PAUSE** also stops Repeat Playback.

NTSC Playback

Your video recorder is equipped with NTSC circuitry that can play back NTSC tapes.

1 LOAD A CASSETTE

Insert a cassette recorded in NTSC.

2 START PLAYBACK

Press **PLAY**.

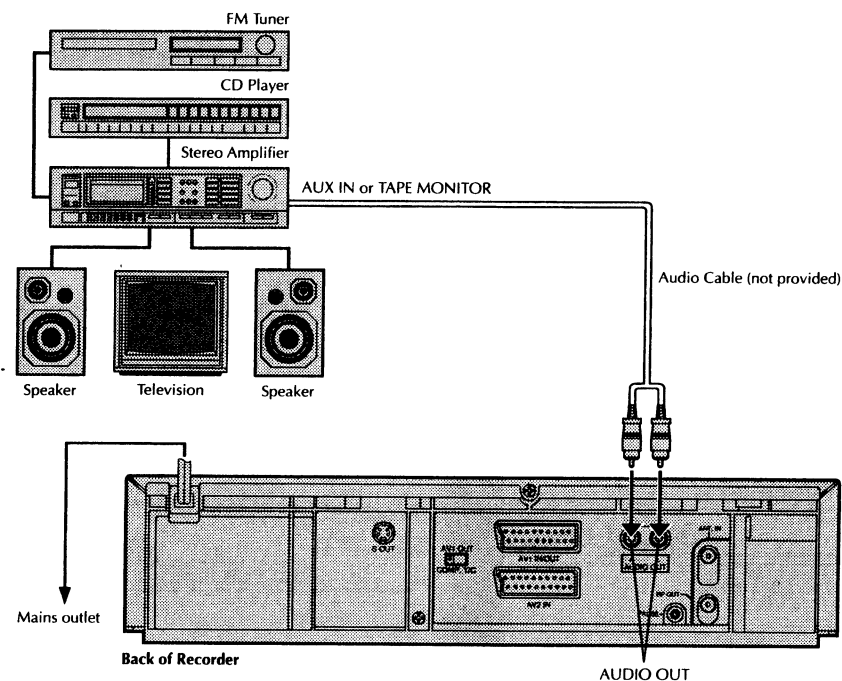
- "NTSC→PAL" appears on the screen for about 5 seconds.
- Some TVs shrink the picture vertically and place black bars at the top and bottom of the screen. This is not a malfunction on the part of either the video recorder or the TV.
- The picture may roll up and down. This can be corrected using the V-HOLD control found on some TVs. (This cannot be corrected if the TV does not have a V-HOLD control.)
- The counter and tape remaining time readings will be incorrect.
- During search, still, or frame-by-frame playback, the picture will be distorted, and there may be a loss of colour.
- Depending on the type of TV, the top and bottom portions of superimposed displays may be cut off during NTSC playback.

Next Function Memory

You can set your recorder's power to go off automatically after the tape is fully rewind. Before starting, make sure the recorder is in the Stop mode.
For Automatic Power Off After Tape Rewind . . .
... press **REW**, then press **⏮** within 2 seconds.

These instructions enable you to connect your video recorder to your Hi-Fi stereo system (if you have one) and listen to the soundtrack through the stereo.

Connection To A Stereo System



1 MAKE CONNECTIONS

Connect the AUDIO OUT L and R connectors on your video recorder to the AUX IN or TAPE MONITOR terminals on your stereo system's receiver or amplifier.

NOTES:

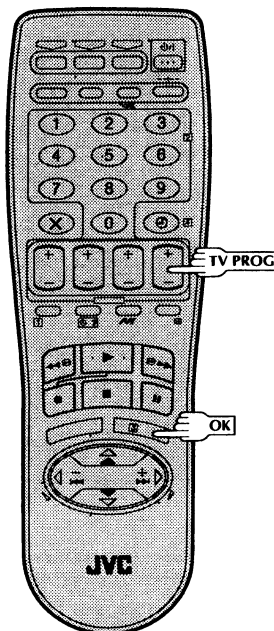
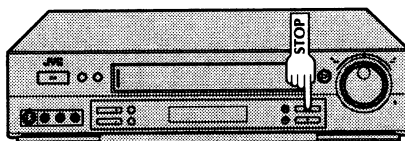
- When connecting your recorder's audio output connectors to a stereo amplifier, make sure you connect L and R correctly.
- If you can receive NICAM TV broadcasts in your area, this recorder can record them independently of the TV set and play them back through the connected stereo system.
- When listening to sound through the connected stereo system, turn the TV's volume down completely.

CAUTIONS:

- This recorder has a dynamic range of more than 80 dB with regards to its Hi-Fi audio capability. It is recommended that you check the maximum level if you are going to listen to the Hi-Fi audio signals through a stereo amplifier. A sudden surge in the input level to the speakers may damage them.
- Some speakers and televisions are specially shielded to prevent television interference. If both are of the non-shielded type, do not place the speakers adjacent to the TV set as this can adversely affect the video playback picture.

Video Channel Set

Video Channel (RF Output Channel) is the channel on which your TV receives picture and sound signals from the video recorder through the RF cable.



IMPORTANT

Perform the following steps only if —

- Video Channel Set has not been done correctly by the Auto Set Up function (pg. 8).
- interference appears in the TV picture after you have moved to a different area or a new station has started broadcasting in your area.
- you change the connection between your recorder and TV from RF connection to AV or S-VIDEO connection, or vice versa.

- If you have connected the video recorder to your TV via both the provided RF cable and a 21-pin SCART cable (AV connection), or via the provided RF cable, an S-Video cable and an audio cable (S-VIDEO connection), you do not need the video channel so you have to set the video channel to off. — Go to "With AV or S-VIDEO Connection" below.
- If you have connected the video recorder to your TV via the provided RF cable only (RF connection), you have to set the correct video channel — Go to "With RF Connection" on page 39.

With AV or S-VIDEO Connection

Before performing the following procedure, make sure that:

- the mains power cord is plugged into the mains outlet.
- the video recorder is turned off and there is no cassette inserted in the recorder.
- batteries have been installed in the remote control.

ACCESS VIDEO CHANNEL SET MODE

Press and hold down **STOP** on the recorder until the display panel shows the following.



SET VIDEO CHANNEL

Press **TV PROG** — until the display panel shows "_OUT —".



- Now the video channel is set to off.

EXIT VIDEO CHANNEL SET MODE

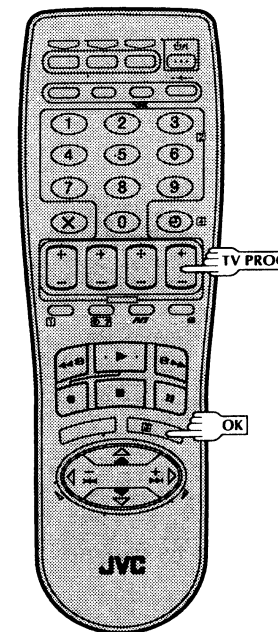
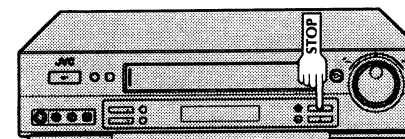
Press **OK**.

To view picture signals from the video recorder, set your TV to its AV mode. Refer to the instructions supplied with your TV set for how to do this.

With RF Connection

Before performing the following procedure, make sure that:

- the mains power cord is plugged into the mains outlet.
- the video recorder is turned off and there is no cassette inserted in the recorder.
- the connected TV is turned on.
- batteries have been installed in the remote control.



ACCESS VIDEO CHANNEL SET MODE

Press and hold down **STOP** on the recorder until the display panel shows the following.



SET VIDEO CHANNEL

Press **TV PROG** or — to set the video recorder to a vacant channel between 22 and 69 which is not occupied by any local station in your area. Refer to list on page 46 for details of broadcast stations in your area.

(Ex.) If channel 36 is available in your area



Then set your TV to UHF channel 36. (Refer to the instructions supplied with your TV set for how to do this.)

- If the two vertical white bars appear clearly on the screen as shown in the illustration at bottom left, go to step 3.
- If the two vertical white bars do not appear clearly, re-set the video recorder to another vacant channel and try again.

IMPORTANT

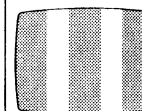
- If you set the video recorder to a channel which is occupied by a local station or has neighbouring channels that are occupied by local stations, the picture reception quality will be affected and some interference noise will appear on the TV screen. Be sure to select a vacant channel which has no broadcast on neighbouring channels.
- If you cannot obtain the two vertical white bars clearly with any channel between 22 and 69, consult your JVC dealer.

EXIT VIDEO CHANNEL SET MODE

Press **OK**.

To view picture signals from the video recorder, set your TV to the Video Channel.

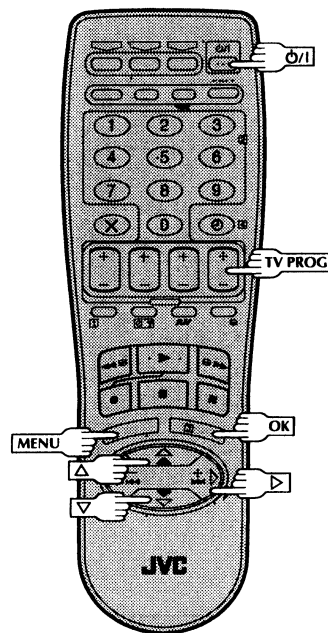
TEST SIGNAL



The channel on which the screen on the left appears clearly in step 2 is your Video Channel.

Tuner Set

Turn on the TV and select the VIDEO channel (or AV mode).



IMPORTANT

Perform the following steps only if —

- Auto Channel Set has not been set correctly by Auto Set Up function (pg. 8).
- you have moved to a different area or if a new station starts broadcasting in your area.

Your recorder needs to memorise all necessary stations in preset positions in order to record TV programmes. Auto Channel Set automatically assigns all receivable stations in your area to call them up by using the TV PROG buttons without going through any vacant channel.

Auto Channel Set

TURN ON THE RECORDER

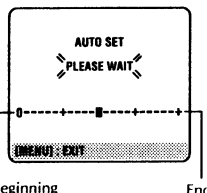
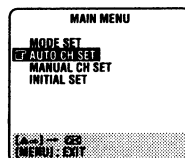
Press ϕ/I .

ACCESS MAIN MENU SCREEN

Press MENU.

PERFORM AUTO CHANNEL SET

Move the highlight bar (pointer) to "AUTO CH SET" by pressing Δ/∇ , then press OK or $\triangleright$.



Beginning End

- The Auto Set screen appears, and remains on screen while the recorder searches for receivable stations. As Auto Channel Set progresses, the "■" mark on the screen moves from left to right.
- Wait until the screen as shown in step 4 appears.
- Auto Channel Set usually takes about 4 – 12 minutes; the duration varies by area.

VIEW CONFIRMATION SCREEN

4

After "SCAN COMPLETED" is displayed on the screen for about 5 seconds, a Confirmation screen

looking like the one on the right appears. The stations your recorder located appear on a Confirmation screen — preset positions (PR), channels (CH) and station names (ID — pg. 45). The blueback screen and the programme currently being broadcast by the station which is blinking appear alternately for 8 seconds each.

To view the next page, use the Δ/∇ button on the remote control.

- The Guide Program numbers will also be set automatically during Auto channel Set.

RETURN TO NORMAL SCREEN

5

Press MENU.

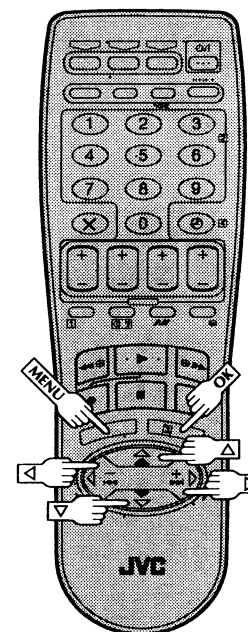
- Using the Confirmation screen, you can skip or add preset positions, enter station names and perform other operations. Refer to pages 42 – 46 for the procedures.
- Depending on reception conditions, the stations may, on occasion, not be stored in order, and the station names may not be stored correctly.

IMPORTANT

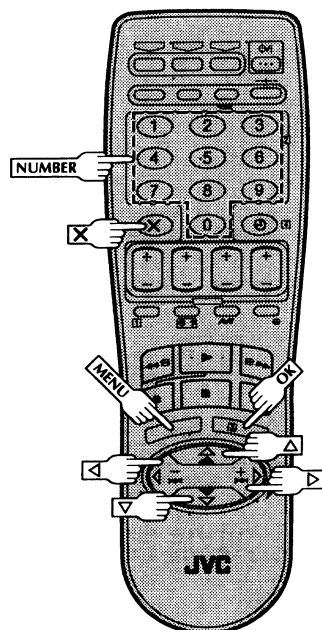
- In certain reception conditions, station names may not be stored correctly, and auto Guide Program Number Set may not work properly. If the Guide Program numbers are not set properly, when you timer-record a TV programme using Video Plus+, the recorder will record a TV programme of a different station. When programming the timer using Video Plus+, be sure to check that the preset position corresponding to the broadcasting station you wish to record has been selected (pg. 14, "Video Plus+ Timer Programming").
- Your video recorder memorizes all detected stations even if reception of some of them is poor. In these cases picture quality may be poor. To delete those stations which have an unacceptable picture $\square$ "Delete A Channel" on page 43.

NOTES:

- Fine tuning is performed automatically during Auto Channel Set. If you wish to perform it manually, refer to page 43.
- If, for any reason, you perform Auto Channel Set when the aerial cable is not connected properly, "SCAN COMPLETED - NO SIGNAL -" appears on the screen in step 4. When this happens, make sure of the aerial connection and press OK; Auto Channel Set will take place again.



PR	CH	ID	PR	CH	ID
01	33	BUL	03	---	---
02	33	BUL	04	30	CH4
03	23	ITV	05	37	CH5
04	30	CH4	06	---	---
05	37	CH5	07	---	---
06	---	---			
07	---	---			

**ATTENTION**

After you have stored channels manually, be sure to perform Guide Program Number Set (pg. 48) in order to get proper results from Video Plus+ timer recording.

Storing Channels Manually

To store channels that were not stored during Auto Set Up (pg. 8) or Auto Channel Set (pg. 40).

ACCESS MAIN MENU

Press **MENU**.

ACCESS CONFIRMATION SCREEN

Press $\Delta \nabla$ to move the highlight bar (pointer) to "MANUAL CH SET", then press **OK** or $\triangleright$. The Confirmation screen appears.

SELECT POSITION

Press $\Delta \nabla \triangleleft \triangleright$ until an open position in which you want to store a channel begins blinking, then press **OK**. The Manual Channel Set screen appears.

(Ex.) To store in position 6.

PR	CH	ID	PR	CH	ID
01	26	BBC1	08	---	---
02	33	BBC2	09	---	---
03	23	ITV	10	---	---
04	30	CH4	11	---	---
05	37	CH5	12	---	---
06	---	---	13	---	---
07	---	---	14	---	---

[A-4]: EXIT
[23]: EXIT
[X]: DELETE
[MENU]: EXIT

The blueback screen and the programme currently being broadcast by the selected channel appear alternately for 8 seconds each.

INPUT CHANNEL

Press the **NUMBER** keys to input the channel number you want to store.

- To input the registered station name (ID - pg. 45), press $\triangleright$ until "----" (ID setting) begins blinking, then press $\Delta \nabla$.

- For fine tuning adjustment, press $\triangleright$ until "+/-" begins blinking, then press $\Delta \nabla$. While tuning, "+" or "-" appears.

PR	CH	ID	FINE
06	CH21	---	---

[0-9]: SELECT
[X]: CURSOR
[23]: OK
[MENU]: EXIT

The blueback screen and the programme currently being broadcast by the selected channel appear alternately for 8 seconds each.

ENTER NEW CHANNEL INFORMATION

Press **OK** and the Confirmation screen appears.

- Repeat steps 3 through 5 as necessary.

CLOSE CONFIRMATION SCREEN

Press **MENU**.

- To change positions, see "Change Station Preset Position" (pg. 43).
- If you wish to set station names other than the ones registered in your recorder, see "Set Stations (B)" on page 44.

Delete A Channel

Perform steps 1 and 2 of "Storing Channels Manually" on page 42 to access the Confirmation screen before continuing.

SELECT ITEM

Press $\Delta \nabla \triangleleft \triangleright$ until the item you want to delete begins blinking.

DELETE CHANNEL

Press **X**.

- The item directly beneath the cancelled one moves up one line.
- Repeat steps 1 and 2 as necessary.

CLOSE CONFIRMATION SCREEN

Press **MENU**.

Change Station Preset Position

Perform steps 1 and 2 of "Storing Channels Manually" on page 42 to access the Confirmation screen before continuing.

SELECT ITEM

Press $\Delta \nabla \triangleleft \triangleright$ until the item you want to move begins blinking. Then press **OK** and the station name (ID) and its channel (CH) number begin blinking.

SELECT NEW POSITION

Press $\Delta \nabla \triangleleft \triangleright$ to move the station to the new preset position, then press **OK**.

Example: If you moved the station in position 4 to position 2, the stations originally in positions 2 and 3 each move down one space.

PR	CH	ID	PR	CH	ID
01	26	BBC1	08	---	---
02	23	ITV	09	---	---
03	30	CH4	10	---	---
04	33	BBC2	11	---	---
05	37	CH5	12	---	---
06	---	---	13	---	---
07	---	---	14	---	---

[A-4]: MOVE
[23]: MANUAL CH SET
[MENU]: EXIT

PR	CH	ID	PR	CH	ID
01	33	BBC2	08	---	---
02	23	ITV	09	---	---
03	30	CH4	10	---	---
04	37	CH5	11	---	---
05	---	---	12	---	---
06	---	---	13	---	---
07	---	---	14	---	---

[A-4]: MOVE
[23]: MOVE
[MENU]: EXIT

- Repeat steps 1 and 2 as necessary.

CLOSE CONFIRMATION SCREEN

Press **MENU**.

ATTENTION

After you have deleted channels or changed preset positions, be sure to perform Guide Program Number Set (pg. 48) in order to get proper results from Video Plus+ timer recording.

Fine-Tuning Channels Already Stored

Perform steps 1 and 2 of "Storing Channels Manually" on page 42 to access the Confirmation screen before continuing.

SELECT CHANNEL TO FINE-TUNE

Press $\Delta \nabla \triangleleft \triangleright$ until the channel you want to tune begins blinking.

ACCESS MANUAL CHANNEL SET SCREEN

Press **OK** twice. The Manual Channel Set screen appears.

PERFORM TUNING

Press $\triangleright$ until "+/-" begins blinking, then press $\Delta \nabla$ until the picture is clearest. Then press **OK**.

- The Confirmation screen appears.
- Repeat steps 1 through 3 as necessary.

CLOSE CONFIRMATION SCREEN

Press **MENU**.

Set Stations (A)

Set station names that are registered in your recorder.

Perform steps 1 and 2 of "Storing Channels Manually" on page 42 to access the Confirmation screen before continuing.

1 SELECT ITEM

Press Δ ∇ $\triangleleft$ $\triangleright$ until the item you want begins blinking.

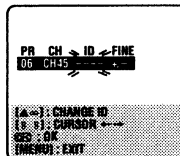
2 ACCESS MANUAL CHANNEL SET SCREEN

Press **OK** twice.

3 SELECT NEW STATION

Press $\triangleright$ until the station name (ID) begins blinking, then press Δ ∇ until the new station's name (ID) you want to store begins blinking.

Registered station names (pg. 45) appear as you press Δ ∇ .



4 SWITCH STATIONS

Press **OK**.

- The Confirmation screen appears.
- Repeat steps 1 through 4 as necessary.

5 CLOSE CONFIRMATION SCREEN

Press **MENU**.

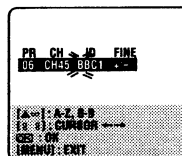
Set Stations (B)

Set station names other than the ones registered in your recorder.

Perform steps 1 and 2 of "Storing Channels Manually" on page 42 to access the Confirmation screen and then perform step 1 and 2 of "Set Stations (A)" on the left before continuing.

1 SELECT STATION NAME CHARACTER

Press $\triangleright$ until the first letter of the station name begins blinking.



2 ENTER NEW CHARACTER

Press Δ ∇ to cycle through the characters (A-Z, 0-9, -, *, +, — (space)) and stop when the desired character is indicated, then press $\triangleright$ to enter. Enter the remaining characters the same way (maximum of 4). After entering all characters, press **OK**.

- The Confirmation screen appears.
- If you make a mistake, press $\triangleleft$ until the incorrect character begins blinking. Then enter the correct character by pressing Δ ∇ .

3 CLOSE CONFIRMATION SCREEN

Press **MENU**.

TV Station And ID List

STATION NAME	ID*
Anglia TV	ANGL
ARD	ARD
ARTE	ARTE
BBC Group	BBC
BBC1	BBC1
BBC2	BBC2
Berlin 1	BLN1
Berlin 2	BLN2
Border TV	BORD
Bayern1	BR1
Bayern3	BR3
BRT1	BRT1
BRT2	BRT2
Children Ch	CHLD
Canal +	CH+
CNN	CNN
Channel TV	CHNL
Central TV	CNTR
Channel 4	CH 4
Channel 5	CH 5
DRS	DRS
DR TV	DRTV
DSF	DSF
Euronews	EURN
Euronews	EURO
Eurosports	EURS
France1	FR1
France2	FR2
France3	FR3
Granada TV	GRNA
Grampian TV	GRMP
Hessen1	HR1
Hessen3	HR3
HRT	HRT
HTV	HTV
ITV Network	ITV
Kabelkanal	KABL
London	LNDN
MDR	MDR
MTV	MTV
Nord3	N3
NDR1	NDR1
NDR3	NDR3
NED1	NED1
NED2	NED2
NED3	NED3
Network 2	NET2
NRK	NRK
N-TV	N-TV
Offener Kanal	OKAN
ORF1	ORF1
ORF2	ORF2
ORF3	ORF3
OWL 3	OWL3
Premiere	PRMI
PRO7	PRO7
RAI1	RAI1
RAI2	RAI2
RAI3	RAI3
RB1	RB1
RB3	RB3
Rikisutvarpid-S	RKPS
RTBF 1	RTB1
RTBF 2	RTB2
RTE 1	RTE1
RTL	RTL
RTL 2	RTL2
RTP	RTP

STATION NAME	ID*
SAT	SAT
SAT 1	SAT1
Scottish TV	SCOT
SC4	SC4
SDR	SDR
SDR1	SDR1
SFB1	SFB1
SFB3	SFB3
SKY	SKY
Sky One	SKY1
Sky Net	SKYN
Sport	SPRT
SR 1	SR1
Super RTL	SRTL
STV Test	STVT
STV 1	STV1
STV 2	STV2
Suedwest3	SW3
SWF 1	SWF1
Schweiz4	SWZ4
TYNE TEES	TEES
Text	TEXT
TF1	TF1
TNT int	TNT
TRT int	TRT
TSI	TSI
TSR	TSR
TSW	TSW
TVE	TVE
TV Polonia	TVPA
TVP 1	TVP1
TVP 2	TVP2
TVS	TVS
TV2	TV2
TV5	TV5
Tele Zurich	TZUR
Ulster TV	ULST
Veronica	VERN
VIVA	VIVA
VIVA2	VIV2
VOX	VOX
VTM	VTM
VT4	VT4
West1	WDR1
West3	WDR3
YLE 1	YLE1
YLE 2	YLE2
Yorkshire TV	YORK
ZDF	ZDF
Zurich 1	ZUR1
3SAT	3SAT

* The "ID" abbreviation is what is shown on-screen in lieu of the station name. The "ID" abbreviation is listed in the Confirmation screen and is displayed on the TV screen each time the recorder is tuned to a different station.

TV Station Channel Number Guide

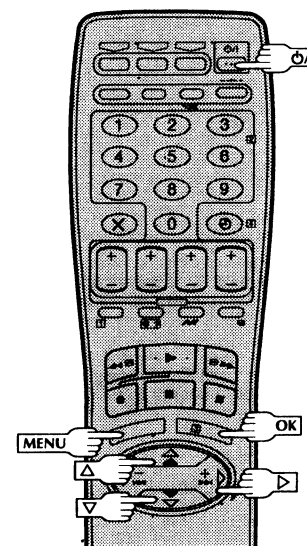
For customers in the U.K.

Only the main stations are listed. There are in addition many relay stations, and full lists are available from the BBC and ITV.

	BBC1	BBC2	ITV	CH4	CH5		BBC1	BBC2	ITV	CH4	CH5
London & South-East						North-West					
Bluebell Hill	40	46	43	65	—	Caldbeck	30	34	28	32	56
Crystal Palace	26	33	23	30	37	Winter Hill	55	62	59	65	48
Dover	50	56	66	53	—	North-East					
Heathfield	49	52	64	67	—	Bilsdale West Moor	33	26	29	23	35
Oxford	57	63	60	53	49	Chatton	39	45	49	42	—
South-West						Pontop Pike	58	64	61	54	68
Beacon Hill	57	63	60	53	—	Scotland					
Caradon Hill	22	28	25	32	—	Angus	57	63	60	53	—
Huntshaw Cross	55	62	59	65	67	Black Hill	40	46	43	50	37
Redruth	51	44	41	47	37	Sandale	22	—	—	—	—
Stockland Hill	33	26	23	29	—	Caldbeck	—	34	28	32	56
Channel Islands						Creigkelly	31	27	24	21	48
Fremont Point	51	44	41	47	—	Darvel	33	26	23	29	35
South						Durris	22	28	25	32	67
Hannington	39	45	42	66	35	Eitshal	33	26	23	29	—
Midhurst	61	55	58	68	—	Keelylang Hill	40	46	43	50	—
Rowridge	31	24	27	21	—	Knock More	33	26	23	29	—
West						Rosemarkie	39	45	49	42	67
Mendip	58	64	61	54	37	Rumster Forest	31	27	24	21	—
East						Selkirk	55	62	59	65	52
Sandy Heath	31	27	24	21	39	Wales					
Sudbury	51	44	41	47	35	Blaenplwyf	31	27	24	21	56
Tacolneston	62	55	59	65	52	Carmel	57	63	60	53	—
Midlands						Llanddona	57	63	60	53	—
Ridge Hill	22	28	25	32	35	Moel-y-Parc	52	45	49	42	—
Sutton Coldfield	46	40	43	50	37	Presely	46	40	43	50	37
The Wrekin	26	33	23	29	35	Wenvoe	44	51	41	47	—
Waltham	58	64	61	54	35	Northern Ireland					
North						Brougher Mountain	22	28	25	32	—
Belmont	22	28	25	32	56	Divis	31	27	24	21	37
Emley Moor	44	51	47	41	37	Limavady	55	62	59	65	—

Clock Set

Turn on the TV and select the VIDEO channel (or AV mode).



Just Clock

The Just Clock function provides accurate time keeping through automatic adjustments at regular intervals, by reading data from a PDC signal. The Just Clock option can be set "ON" or "OFF" at the Clock Set screen (the default setting is "ON"). Press OK until the Just Clock setting begins blinking, then press Δ / ∇ to change the setting.

IMPORTANT: If you turn the Just Clock function off, the accuracy of your recorder's built-in clock may be impaired, which could adversely affect timer recording.

NOTES:

- Just Clock (when set to "ON") adjusts the recorder's built-in clock every hour, except for 23:00, 0:00, 1:00 and 2:00.
- Just Clock is not effective when ...
 - the recorder's power is on.
 - the recorder is in the Timer mode.
 - a difference of more than 3 minutes exists between the built-in clock's time and the actual time.
 - the recorder is in the Auto Satellite Prog Rec mode (pg. 26).
- If Just Clock is set to "ON", the recorder's clock is automatically adjusted at the start/end of Summer Time.
- Just Clock may not function properly in poor reception conditions.

IMPORTANT

If you performed Auto Set Up (pg. 8) or Auto Channel Set (pg. 40), without ever having set the clock previously, the recorder's built-in clock is also set automatically. Perform the following steps only if —

- Auto Clock Set has not been performed correctly by Auto Set Up or Auto Channel Set.
- the recorder's memory backup has expired.
- or
- you want to change Just Clock setting (pg. "Just Clock" in the left column).

TURN THE RECORDER ON

Press Δ / ∇ .

ACCESS MAIN MENU SCREEN

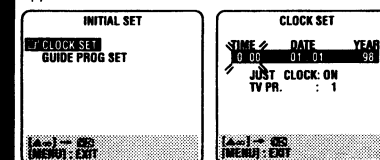
Press MENU.

ACCESS INITIAL SET SCREEN

Move the highlight bar (pointer) to "INITIAL SET" by pressing Δ / ∇ , then press OK or $\triangleright$.

ACCESS CLOCK SET SCREEN

Move the highlight bar (pointer) to "CLOCK SET" by pressing Δ / ∇ , then press OK or $\triangleright$. The Clock Set screen appears.



SET DATE AND TIME

Press Δ / ∇ to set the time, then press OK or $\triangleright$. The "date" display begins blinking. Repeat the same procedure to set the date and year.

- When you set the time, press and hold Δ / ∇ to change the time by 30 minutes.
- When you set the date, press and hold Δ / ∇ to change the date by 15 days.

SET JUST CLOCK

The default setting is "ON". Set as desired by pressing Δ / ∇ , then press OK or $\triangleright$.

- For the Just clock function, pg. "Just Clock" on the left.
- If you set to "OFF", you can disregard the next step as you won't be able to receive regular clock adjustments.

SET CLOCK DATA SOURCE PRESET

The recorder is preset to receive clock setting and adjustment data from preset position 1. Press Δ / ∇ to set the preset position to the number representing the station transmitting clock setting data (BBC1, BBC2, etc.), then press OK or $\triangleright$.

START CLOCK OPERATION

Press MENU.

Video Plus+ Setup

IMPORTANT

Normally, Auto Set Up (pg. 8) or Auto Channel Set (pg. 40) sets the Guide Program Numbers automatically. You need to set the Guide Program Numbers manually only in the following cases.

- When timer-programming with Video Plus+, the preset position, where the station you wish to record is received on your recorder, is not selected.
- Set the Guide Program Number for that station manually.
- When you add/delete a channel or change preset positions manually after Auto Set Up or Auto Channel Set has taken place.
- Set the Guide Program Numbers for all the receivable stations manually.
- When you wish to timer-record a satellite programme with Video Plus+.
- Set the Guide Program Numbers for all satellite broadcasts received on your satellite receiver.

Turn on the TV and select the VIDEO channel (or AV mode).

Guide Program Number Set

1 ACCESS MAIN MENU SCREEN

Press MENU.

2 ACCESS INITIAL SET SCREEN

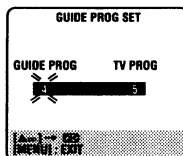
Press Δ or ∇ to move the highlight bar (pointer) to "INITIAL SET", then press OK or $\triangleright$.

3 ACCESS GUIDE PROG SET SCREEN

Press Δ or ∇ to move the highlight bar (pointer) to "GUIDE PROG SET", then press OK or $\triangleright$.

4 ENTER GUIDE PROG NUMBER

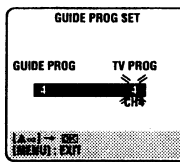
Press Δ or NUMBER keys to enter the Guide Program number for the desired station as shown in the TV listings. Then press OK or $\triangleright$.



(Ex.) When inputting the Guide Program number 4 for CH4.

5 ENTER RECEIVING PRESET POSITION NUMBER

Press Δ or NUMBER keys to input the number of the recorder's preset position on which the Guide Program number's broadcast is received. Then press OK or $\triangleright$.



(Ex.) If CH4 is received on preset position 4.

- If the satellite broadcast is received on your recorder's auxiliary channel "L-2", select "L-2" for the preset position.
- Repeat steps 4 and 5 as necessary.

6 RETURN TO NORMAL SCREEN

Press MENU.

Guide Program Number

"Guide Program (GUIDE PROG) number" refers to the assigned TV station numbers, according to broadcast area, for Video Plus+ timer recording. The Guide Program numbers can be found in most TV listings.

Questions And Answers

PLAYBACK

Q. What happens if the end of the tape is reached during playback or search?

A. The tape is automatically rewound to the beginning.

Q. Can the video recorder indefinitely remain in the still mode?

A. No. It stops automatically after 5 minutes to protect the heads.

Q. During search, slow, still and frame-by-frame playback, I can't hear any audio. What's the problem?

A. This is normal.

Q. When returning from multi-speed search to normal playback, the picture is disturbed. Should I be concerned about this?

A. No, it is normal.

Q. Noise bars appear during multi-speed search. What's the problem?

A. This is normal.

Q. Other than preventing further recording, what effect does removing the Record Safety tab have?

A. It disables marking of index codes.

Q. Sometimes, during Index Search, the video recorder can't find the programme I want to see. Why not?

A. There may be index codes too close together.

RECORDING

Q. When I pause and then resume a recording, the end of the recording before the pause is overlapped by the beginning of the continuation of recording. Why does this happen?

A. This is normal. It reduces distortion at the pause and resume points.

Q. Can the video recorder indefinitely remain in the Record-Pause mode?

A. No. The video recorder shuts off automatically after 5 minutes to protect the heads.

Q. What happens if the tape runs out during recording?

A. The video recorder automatically rewinds it to the beginning or, if Timer Recording, the cassette is ejected.

TIMER RECORDING

Q. "O" and "E" remain lit on the display panel. Is there a problem?

A. No. This is a normal condition for a timer recording in progress.

Q. Can I programme the timer while I'm watching a tape or a TV broadcast?

A. You won't see the picture as it is replaced by the on-screen menu, but the audio from the program or tape you're viewing can be heard.

Q. Is it possible to timer-record a TV programme broadcast in 2000?

A. Yes, it is possible.

ATTENTION

This recorder contains microcomputers. External electronic noise or interference could cause malfunctioning. In such cases, switch the recorder off and unplug the mains power cord. Then plug it in again and turn the recorder on. Take out the cassette. After checking the cassette, operate the unit as usual.

Troubleshooting

Before requesting service for a problem, use this chart to see if you can correct the trouble yourself. Small problems are often easily corrected, and this can save you the trouble of sending your video recorder off for repair.

POWER

SYMPTOM	POSSIBLE CAUSE	CORRECTIVE ACTION
1. No power is applied to the recorder.	• The mains power cord is disconnected.	Connect the mains power cord.
2. The clock is functioning properly, but the recorder cannot be powered.	• "⊖" is displayed on the display panel with Auto Timer set to "OFF".	Press the ⊖ button to turn the "⊖" indicator off.
3. The remote control won't function.	• The batteries are discharged.	Replace the dead batteries with new ones.

TAPE TRANSPORT

SYMPTOM	POSSIBLE CAUSE	CORRECTIVE ACTION
1. The tape does not run during recording.	• "⏏" is displayed on the display panel.	Press PLAY to turn the "⏏" indicator off.
2. The tape will not rewind or fast-forward.	• The tape is already fully rewound or fast-forwarded.	Check the cassette.

PLAYBACK

SYMPTOM	POSSIBLE CAUSE	CORRECTIVE ACTION
1. The playback picture does not appear while the tape is running.	• If you're using the RF OUT connection the TV receiver's channel selector is not set to the VIDEO channel. ... the recorder's VIDEO channel has not been correctly set. • If you're using the AV or S-VIDEO connection, the TV receiver is not set to the AV mode.	If you are using the RF OUT connection set the TV receiver to the VIDEO channel. (⌘ pg. 8) ... Perform "Video Channel Set" (⌘ pg. 38) If you are using the AV or S-VIDEO connection, set the TV to its AV mode.
2. Noise appears during visual search.	• This is normal.	
3. Noise appears during normal playback.	• The automatic tracking mode is engaged.	Try manual tracking (⌘ pg. 22).
4. The playback picture is blurred or interrupted while TV broadcasts are clear.	• The video heads may be dirty.	Consult your JVC dealer.
5. Breaks are noticeable in Hi-Fi soundtrack.	• Automatic tracking is engaged.	Engage and adjust tracking manually. (⌘ pg. 22)

RECORDING

SYMPTOM	POSSIBLE CAUSE	CORRECTIVE ACTION
1. Recording cannot be started.	• There is no cassette loaded, or the cassette loaded has had its Record Safety tab removed.	Insert a cassette, or using adhesive tape, reseal the slot where the tab was removed.
2. TV broadcasts cannot be recorded.	• "L-1", "L-2", "F-1" or "S-1" has been selected as the input mode.	Set to the desired preset.
3. Tape-to-tape editing is not possible.	• The source (another video recorder, camcorder) has not been properly connected. • All necessary power switches have not been turned on. • The input mode is not correct.	Confirm that the source is properly connected. Confirm that all units' power switches are turned on. Set the input mode to "L-1", "L-2", "F-1" or "S-1".

4. Camcorder recording is not possible.

- The camcorder has not been properly connected.
- The input mode is not correct.

Confirm that the camcorder is properly connected.
Set the input mode to "L-1", "L-2", "F-1" or "S-1".

TIMER RECORDING

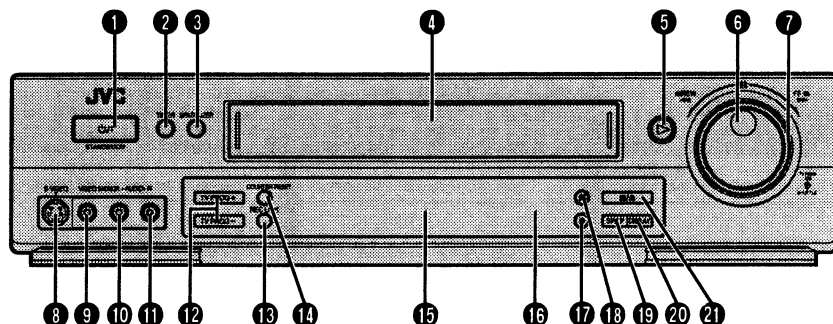
SYMPTOM	POSSIBLE CAUSE	CORRECTIVE ACTION
1. Timer recording won't work.	• The clock and/or the timer have been set incorrectly. • The timer is not engaged.	Re-perform the clock and/or timer settings. Press ⊖ and confirm that "⊖" is displayed on the display panel.
2. Timer programming is not possible.	• Timer recording is in progress.	Timer programming can't be performed while a timer recording is in progress. Wait until it finishes.
3. "⊖" and "⏏" on the display panel won't stop blinking.	• The timer is engaged but there's no cassette loaded.	Load a cassette with the Record Safety tab intact, or cover the hole using adhesive tape.
4. The cassette is automatically ejected, and "⊖" and "⏏" on the display panel won't stop blinking.	• The loaded cassette has had its Record Safety tab removed.	Remove the cassette and cover the hole with adhesive tape, or insert a cassette with the Record Safety tab intact.
5. "⊖" blinks for 10 seconds and the Timer mode is disengaged.	• ⊖ has been pressed when there are no programs in memory, or the timer record information has been programmed incorrectly.	Check the programmed data and re-programme as necessary, then press ⊖ again.
6. The cassette is automatically ejected, the power shuts off and "⊖" and "⏏" won't stop blinking.	• The end of the tape was reached during timer recording.	The programme may not have been recorded in its entirety. Next time make sure you have enough time on the tape to record the entire programme.
7. Video Plus+ does not timer-record properly.	• The recorder's preset positions have been set incorrectly.	Refer to "Guide Program Number Set" and re-perform the procedure (⌘ pg. 48).

OTHER PROBLEMS

SYMPTOM	POSSIBLE CAUSE	CORRECTIVE ACTION
1. Whistling or howling is heard from the TV during camcorder recording.	• The camcorder's microphone is too close to the TV. • The TV's volume is too high.	Position the camcorder so its microphone is away from the TV. Turn the TV's volume down.
2. When scanning channels, some of them are skipped over.	• Those channels have been designated to be skipped.	If you need the skipped channels, restore them (⌘ pg. 42).
3. The preset cannot be changed.	• Recording is in progress.	Press PAUSE to pause the recording, change presets, then press PLAY to resume recording.
4. Channel settings that were made manually seem to have changed or disappeared.	• After the manual settings were made, Auto Channel Set was performed.	Perform manual setting again.
5. No channels are stored in the recorder's memory.	• The TV aerial cable was not connected to the recorder when Auto Set Up was performed.	Connect the TV aerial cable to the recorder properly and turn off the recorder power once, then turn the recorder power back on again. The recorder will try Auto Set Up again (⌘ pg. 8).
6. The remote control won't operate the TV or satellite receiver.	• The remote control brand setting is incorrect.	Re-set the remote control to the correct brand (⌘ pg. 28, 29).

Index

FRONT VIEW

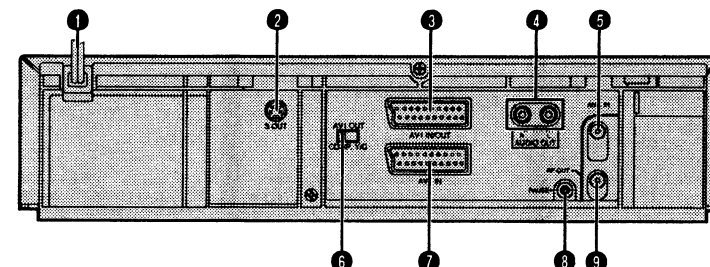


* Attach the provided connector cover when you do not use the front panel connectors.

- 1 **STANDBY/ON** ϕ /I Button turns recorder on/off (loading a cassette also turns power on). $\square$ pg. 15, 17
- 2 **TIMER** Button engages timer standby mode. $\square$ pg. 15, 17
- 3 **SPATIALIZER** Button enables/disables Spatializer[®]. $\square$ pg. 25
- 4 **Cassette Loading Slot** is where cassette is inserted; door closes, "cassette loaded" indicator lights up on front display panel.
- 5 **PLAY** Button plays back tape $\square$ pg. 10; cancels Pause, Still, Slow, Search modes. $\square$ pg. 11
- 6 **TV PROG** Dial scans to desired preset position during Stop mode. $\square$ pg. 12
- 7 **JOG** Dial plays back frame by frame during Still or Play mode. $\square$ pg. 11
- 8 **SHUTTLE** Ring rewinds or fast-forwards tape during Stop mode $\square$ pg. 10; performs forward and reverse slow-motion and search during Still or Play mode. $\square$ pg. 11
- 9 **S-VIDEO Input Connector** enables S-VIDEO connection to camcorder or second recorder. $\square$ pg. 31
- 10 **VIDEO Input Connector** enables easy connection of video output from another recorder or camcorder for editing. $\square$ pg. 31
- 11 **AUDIO Input Connector [L]** enables easy connection of audio output (mono) from another recorder, camcorder or other source for editing. $\square$ pg. 31
- 12 **AUDIO Input Connector [R]** enables easy connection of audio output (Hi-Fi) from another recorder, camcorder or other source for editing. $\square$ pg. 31
- 13 **TV PROG +/-** Buttons select a preset position. $\square$ pg. 12
- 14 **REC LINK** Button enables/disables the Auto Satellite Prog Rec mode. $\square$ pg. 27
- 15 **COUNTER RESET** Button resets counter to 0:00:00. $\square$ pg. 13
- 16 **Display Panel** provides clear view of various displays and indicators. $\square$ pg. 53
- 17 **Infrared Beam Receiving Window** is where remote control should be aimed when in use.
- 18 **RECORD** Button starts regular recording (press once), Instant Timer Recording (press twice); sets duration of ITR. $\square$ pg. 12, 13
- 19 **PAUSE** Button stops tape temporarily during recording $\square$ pg. 12; stops tape temporarily during playback; plays back frame by frame with each additional press. $\square$ pg. 11
- 20 **SP/LP** Button selects tape speed. $\square$ pg. 12
- 21 **DISPLAY** Button switches display between clock time, tape remaining time, counter readings, preset position*. $\square$ pg. 13

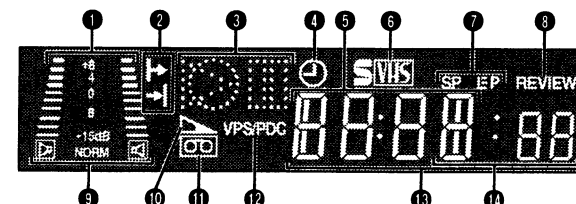
* Preset position is not displayed during playback.
 21 **STOP/EJECT** Button stops tape; ejects tape during Stop mode. $\square$ pg. 10

REAR VIEW



- 1 **Mains Power Cord** supplies power to recorder. $\square$ pg. 6, 7
- 2 **S OUT Connector** enables S-VIDEO connection to TV or second recorder. $\square$ pg. 7, 32
- 3 **AV1 IN/OUT Connector** enables AV connection to TV or second recorder; input recordable when "L-1" selected. $\square$ pg. 6, 32
- 4 **AUDIO OUT (L/R) Connectors** enable connection of audio cassette recorder, TV or second video recorder for dubbing. $\square$ pg. 37
- 5 **ANT. IN Connector** enables connection of aerial. $\square$ pg. 6, 7
- 6 **AV1 OUT Switch** selects the type of signal output via the 21 pin AV1 IN/OUT connector. $\square$ pg. 6
- 7 **AV2 IN Connector** enables connection of satellite receiver or second recorder; input recordable when "L-2" selected. $\square$ pg. 26, 32
- 8 **Remote PAUSE Connector** enables connection to second recorder equipped with R.A. Edit connector, or to JVC camcorder equipped with Master Edit Control, for easy editing. $\square$ pg. 31
- 9 **RF OUT Connector** enables connection to aerial terminal of TV receiver. $\square$ pg. 6, 7

DISPLAY PANEL



- 1 **B.E.S.T. Picture System Display** lights from bottom to top while B.E.S.T. is active. $\square$ pg. 20
- 2 **Audio Level Indicator** displays audio input and output levels.
- 3 **Programme Time Indicators** show the programme start time ($\rightarrow$) and the programme stop time ($\rightarrow$) for timer-recording. $\square$ pg. 16
- 4 **Symbolic Mode Indicators**
- 5 **"Timer" Indicator** lights when $\odot$ has been pressed to engage Timer mode. $\square$ pg. 15, 17
- 6 **Channel Display** shows preset position where the station currently being received is stored.
- 7 **Clock Display** shows current time. $\square$ pg. 9
- 8 **S-VHS Indicator** lights when a cassette marked S-VHS is inserted with S-VHS mode set to "AUTO", and when an S-VHS-recorded tape is played back. $\square$ pg. 19
- 9 **Tape Speed Indicators** display mode of recording; light during Record or Play mode. $\square$ pg. 12
- 10 **Instant REVIEW Indicator** blinks after timer-recording and shows how many programmes have been timer-recorded. $\square$ pg. 23
- 11 **Audio Mode Indicator** displays audio output mode currently selected. $\square$ pg. 24
- 12 **Tape Remaining Time Indicator** displays time remaining on tape when certain buttons are pressed. $\square$ pg. 13
- 13 **"Cassette Loaded" Mark** lights once a cassette is inserted; remains lit until cassette ejected or power turned off.
- 14 **PDC Indicator** lights when PDC has been engaged for timer recording. $\square$ pg. 15, 17

PLAY: FF/REW VARIABLE SHUTTLE SEARCH:	▶	STILL:	▶▶
---	---	--------	--

* Preset Position is not displayed during playback.

* EP is only for NTSC playback.

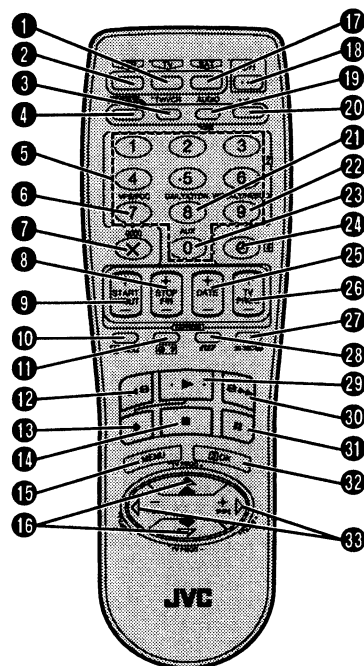
* VPS (Video Programme System) recording is not currently available in the U.K. and not possible with this recorder.

With $\square$ displayed, shows time remaining from current tape position to end of tape ($\square$ pg. 13). Counter, Preset Position*, Clock and Tape Remaining Time Display appear alternately when **DISPLAY** (or $\rightarrow$ or $\rightarrow$) is pressed.

* Preset Position is not displayed during playback.

11 **Mode** shows external input mode selected (L-1, L-2, F-1 or S-1).

REMOTE CONTROL



Buttons with a small dot on the left side of the name can also be used to operate your TV.
 ☞ pg. 28.

- ❶ **TV Button** enables remote control of your TV.
 ☞ pg. 28
- ❷ **VCR Button** enables remote control of your video recorder. (See ATTENTION on next page)
- ❸ **TV/VCR Button** switches connected TV's mode between TV and AV. ☞ pg. 28
- ❹ **REVIEW Button** "reviews" timer-recorded programme. ☞ pg. 23
- ❺ **NUMBER Keys** are used in preset position selection ☞ pg. 12, Video Plus+ timer programming ☞ pg. 14.
- ❻ **PDC Button** enables/disables PDC recording.
 ☞ pg. 15, 17
** VPS (Video Programme System) recording is not currently available in the U.K. and not possible with this recorder.*
- ❼ **X Button** cancels timer-programme. ☞ pg. 18
- ❽ **0000 Button** resets counter to 0:00:00. ☞ pg. 13
- ❾ **STOP +/- Button** inputs programme Stop Time.
 ☞ pg. 16
- ❿ **START +/- Button** accesses Regular Program screen; inputs programme Start Time. ☞ pg. 16
- ⓫ **PROG Button** accesses Video Plus+ Program screen. ☞ pg. 14
- ⓬ **? Button** accesses Program screens/displays to check the programme that you have programmed (next programme's information screen/display appears each time button is pressed). ☞ pg. 18
- ⓭ **Rewind [REW] Button** rewinds the tape ☞ pg. 10; initiates high-speed reverse search. ☞ pg. 11
- ⓮ **Record Button** — same as button on recorder.
 ☞ pg. 12
- ⓯ **Stop Button** — same as button on recorder.
 ☞ pg. 10
- ⓰ **MENU Button** accesses Menu screen. ☞ pg. 19
- ⓱ **△▽ Button** is used for selection in on-screen menus. ☞ pg. 19
TV PROG +/- selects the connected TV's/satellite receiver's channel. ☞ pg. 28, 29
- ⓲ **SAT Button** enables remote control of the satellite receiver. ☞ pg. 29
- ⓳ **STANDBY/ON ⏻ Button** — same as button on recorder.
- ⓴ **AUDIO Button** changes output sound mode.
 ☞ pg. 24
⏸/⏹ (TV Muting) Button mutes sound of connected TV. ☞ pg. 28
- ⓵ **--:-- (DISPLAY) Button** — same as button on recorder. ☞ pg. 13
- ⓶ **DAILY Button** enables timer recording of daily serials. ☞ pg. 15, 17

How To Use

The remote control can operate most of your video recorder's functions, as well as basic functions of TV sets and satellite receivers of JVC and other brands. ☞ pg. 28, 29.

- Point the remote control toward the sensor window.
- The maximum operating distance of the remote control is about 8 m.

NOTES:

- When inserting the batteries, be sure to insert in the correct directions as indicated under the battery cover.
- If the remote control doesn't work properly, remove its batteries, wait a short time, replace the batteries and then try again.

- ⓷ **WEEKLY Button** enables timer recording of weekly serials. ☞ pg. 15, 17
- ⓸ **AUX Button** selects recorder's auxiliary input mode. ☞ pg. 31
- ⓹ **⏻ Button** engages timer-standby mode.
 ☞ pg. 15, 17
- ⓺ **DATE +/- Button** inputs date of programme for timer recording. ☞ pg. 16
- ⓻ **TV PROG +/- Button** — same as button on recorder. ☞ pg. 12
- ⓼ **30 SEC Button** initiates a 30-second period of fast-motion playback. ☞ pg. 23
- ⓽ **Auto Tracking Button** enables/disables auto tracking mode during playback ☞ pg. 22
- ⓾ **SP/LP Button** selects tape speed. ☞ pg. 12
- ⓿ **Play Button** — same as button on recorder.
 ☞ pg. 10, 11
- ⓿ **Fast Forward [FF] Button** fast-forwards tape ☞ pg. 10; initiates high-speed forward search. ☞ pg. 11
- ⓿ **Pause Button** — same as button on recorder.
 ☞ pg. 11
- ⓿ **OK Button** enters selections made in on-screen menus. ☞ pg. 19
- ⓿ **<|> Button** initiates functions such as Index Search ☞ pg. 23, variable-speed search, frame by frame playback. ☞ pg. 11
TV ▽ +/- Button controls volume of connected TV. ☞ pg. 28

ATTENTION

The remote control can operate not only the video recorder but also some of your TV and satellite receiver's functions.

- To operate your video recorder, first press the **VCR** button to set the remote control to the Video mode.
- To operate your TV, first press the **TV** button to set the remote control to the TV mode (☞ pg. 28).
- To operate your satellite receiver, first press the **SAT** button to set the remote control to the Satellite Receiver mode (☞ pg. 29).

SPECIFICATIONS

GENERAL

Power requirement	: AC 220 – 240 V~, 50/60 Hz
Power consumption	
Power on	: 26 W
Power off	: 5.5 W
Temperature	
Operating	: 5°C to 40°C
Storage	: -20°C to 60°C
Operating position	: Horizontal only
Dimensions (WxHxD)	: 400 x 94 x 347 mm
Weight	: 3.8 kg
Format	: S-VHS/VHS PAL standard
Maximum recording time	
(SP)	: 240 min. with E-240 video cassette
(LP)	: 480 min. with E-240 video cassette

VIDEO/AUDIO

Signal system	: PAL-type colour signal and CCIR monochrome signal, 625 lines/50 fields
Recording system	: DA4 (Double Azimuth) helical scan system
Signal-to-noise ratio	: 45 dB
Horizontal resolution	: 250 lines (VHS) 400 lines (S-VHS)
Frequency range	: 70 Hz to 10,000 Hz (Normal audio) 20 Hz to 20,000 Hz (Hi-Fi audio)
Input/Output	: 21-pin scart connectors (IN/OUT x 1, IN x 1) RCA connectors (VIDEO IN x 1, AUDIO IN x 1, AUDIO OUT x 1) S-Video connectors (IN x 1, OUT x 1)

TUNER/TIMER

TV channel storage capacity	: 99 positions (+AUX position)
Tuning system	: Frequency synthesized tuner
Channel coverage	: UHF channels 21 – 69 (470 – 862 MHz)
Aerial output	: UHF channels 22 – 69 (Adjustable)
Memory backup time	: Approx. 10 min.

ACCESSORIES

Provided accessories	: RF cable, Infrared remote control unit, "AA" battery x 2, Connector cover (for front panel connectors)
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*Specifications shown are for SP mode unless otherwise specified.
E.& O.E. Design and specifications subject to change without notice.*

HR-S7500EK

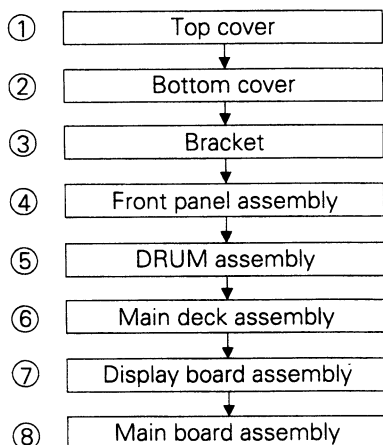
JVC
VICTOR COMPANY OF JAPAN, LIMITED



SECTION 1 DISASSEMBLY

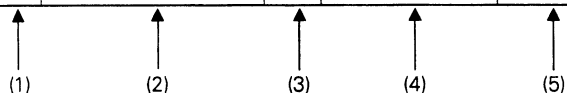
1.1 DISASSEMBLY FLOW CHART

This flowchart lists the disassembling steps for the cabinet parts and P.C. boards in order to gain access to item(s) to be serviced. When reassembling, perform the step(s) in reverse order. Bend, route and dress the flat cables as they were originally laid.



1.2 HOW TO READ THE DISASSEMBLY AND ASSEMBLY

STEP /LOC NO.	PART NAME	FIG. NO.	POINT	NOTE
①	TOP COVER	D1	3(S1)	<NOTE 1>
②	BRACKET	D2	2(S2)	
③	FRONT PANEL ASSEMBLY	D3	7(L1)	<NOTE 2> <NOTE 3>



(1) Order of steps in Procedure

When reassembling, perform the step(s) in the reverse order. These numbers are also used as the identification (location) NO. of parts Figures.

(2) Part name to be removed or installed.

(3) Fig.No. showing procedure or part location

(4) Identification of part to be removed, unhooked, unlocked, released, unplugged, unclamped or unsoldered. P = Spring, W = Washer, S = Screw, L = Locking tab, * = Unhook, unlock, release, unplug or unsolder.

(5) Adjustment information for installation

1.3 DISASSEMBLY/ASSEMBLY METHOD

STEP /LOC NO.	PART NAME	FIG. NO.	POINT	NOTE
①	TOP COVER	D1	4(S1), (S2)	
②	BOTTOM COVER	D2	(S3), 7(L1)	
③	BRACKET	D3	2(S4)	
④	FRONT PANEL ASSEMBLY	D4	(S5), 7(L2), WR1, *CN3006, CN7192 JOG SHUTTLE	<NOTE 1> <NOTE 2>
⑤	DRUM ASSEMBLY	D5	3(S6), CN1, WR2, WR3, 4(L3), (L4), (P1) INERTIA PLATE ROLLER ARM ASSY	<NOTE 2>
⑥	MAIN DECK ASSEMBLY	D6	2(S7), 2(S8), WR4 2(L5), *CN4001	<NOTE 3>
⑦	DISPLAY BOARD ASSEMBLY	D7	7(L6), *CN7001, CN7191, REC SAFETY BOARD (L7)	<NOTE 4>
⑧	MAIN BOARD ASSEMBLY	D8	2(S9), (L8)	

<NOTE1>

- Before attaching the Front panel assembly, ensure that the door opener ③ is in the lowered position.

<NOTE2>

- When inserting the flat wire into the connector, be careful not to mistake the positioning of its electrodes.

<NOTE3>

- When it is required to remove the screws (S7) retaining the Main deck assembly, please refer to the "Procedures for Lowering the Cassette holder assembly" (See on pages 1-3).
- The Main deck assembly is also retained by two spacers on the Main board. Therefore, to remove the Main deck assembly, insert radio pliers or a similar tool from the main deck side and pinch the two hooks of the spacers while removing.
- When attaching the Main deck assembly, be careful not to damage the sensors and switches on the Main board (D3001: LED, Q3001: Start sensor, Q3002: End sensor S3001 : S cassette switch).

<NOTE4>

- The REC safety board assembly is attached to the Display board assembly. It is therefore necessary to remove the REC safety board assembly before removing the Display board assembly.
- When inserting the flat wire into the connector, be careful not to mistake the positioning of its electrodes.

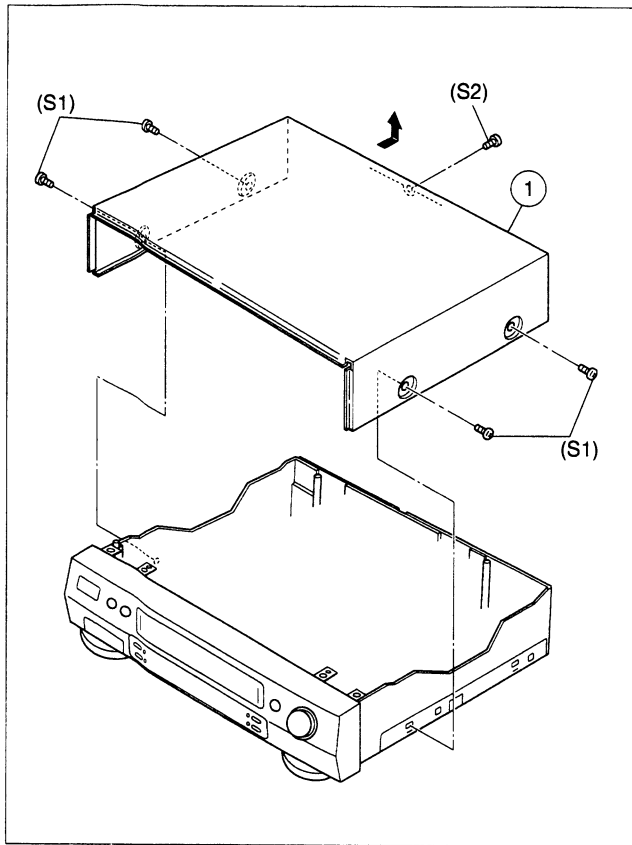


Fig. D1

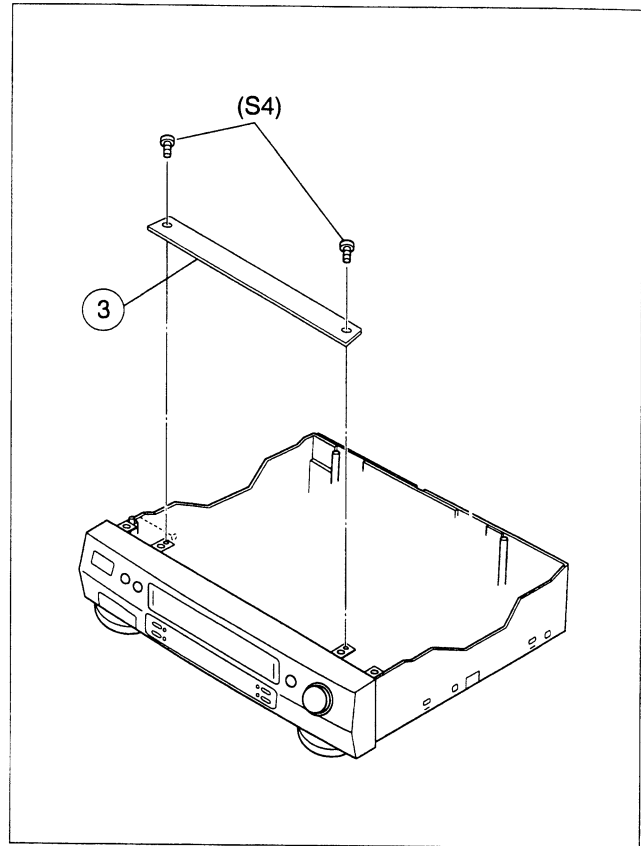


Fig. D3

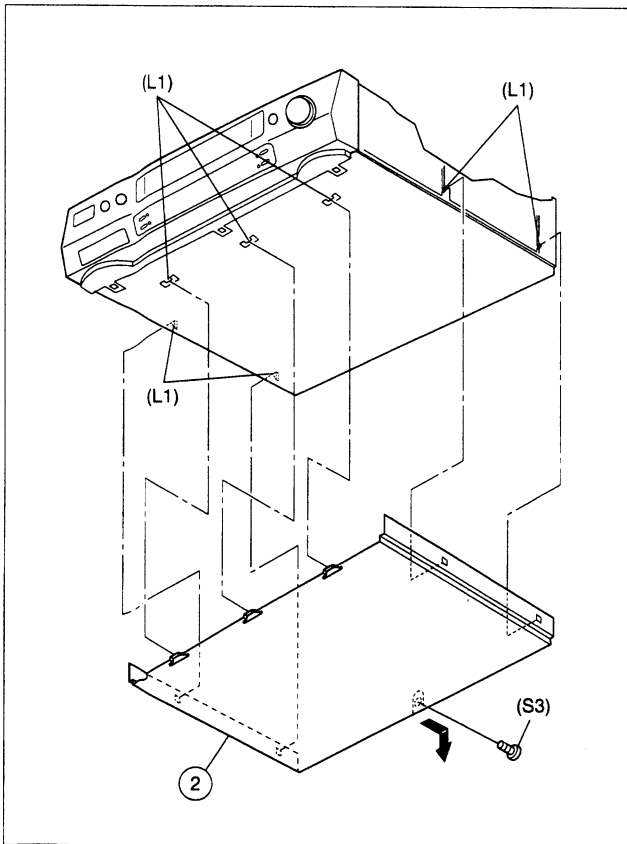


Fig. D2

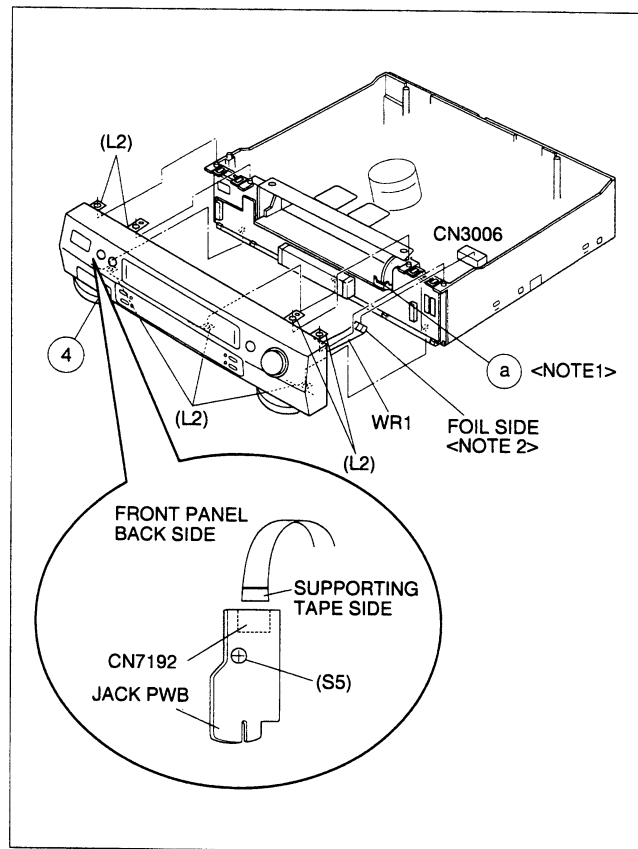


Fig. D4

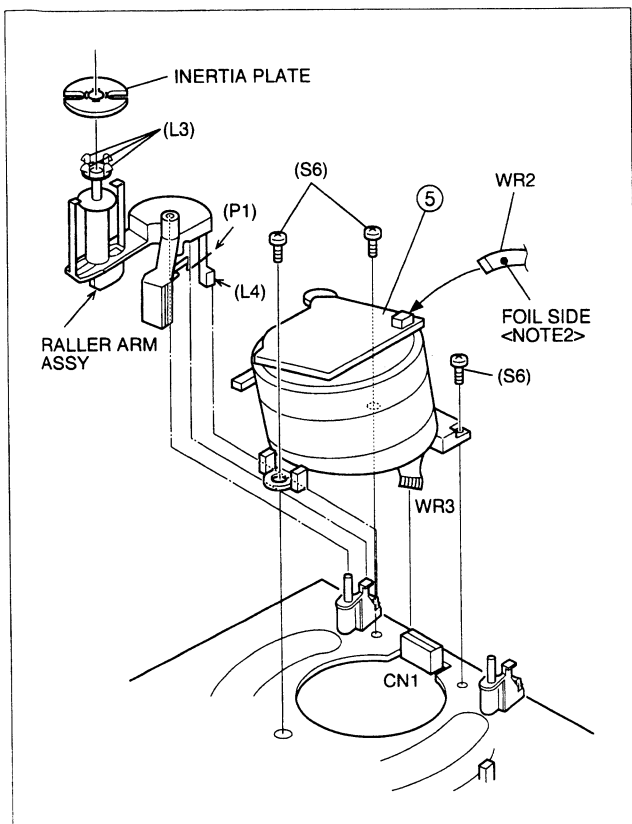


Fig. D5

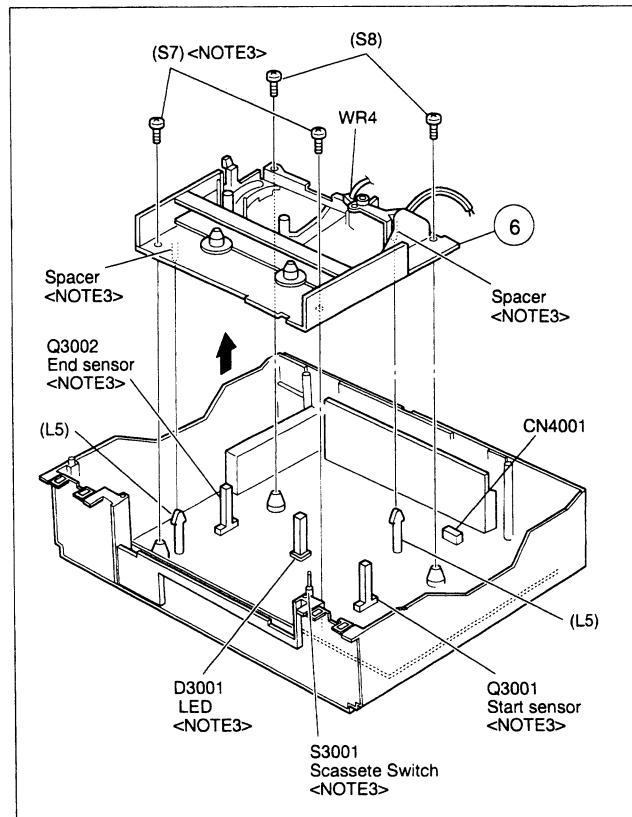


Fig. D6

Procedures for Lowering the Cassette holder assembly

As the mechanism of this unit is integrated with the Housing assembly, the holder must be lowered and the two bolts unscrewed when removing the Main deck assembly.

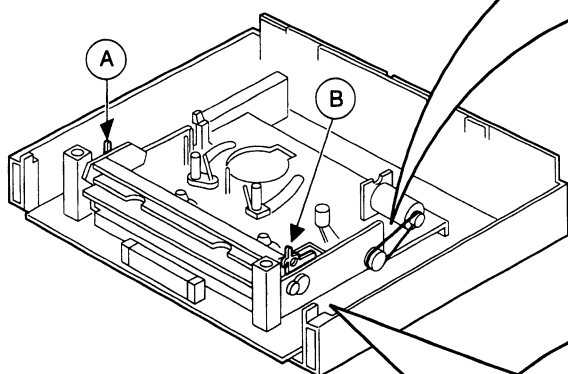


Fig. 1

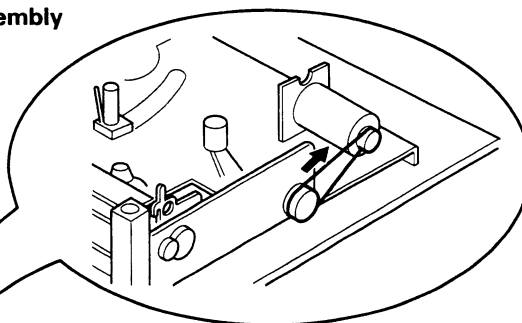


Fig. 2

Turn the loading motor pulley in the direction as indicated by Fig.2. As both (A) and (B) levers are lodged twice, push the levers in the direction as indicated by Fig.3 to release them. When pushing the levers, do it in the order of (A), (B), (B), (A). When the holder has been lowered, turn the pulley until the cassette holder is securely in place without allowing any up/down movement.

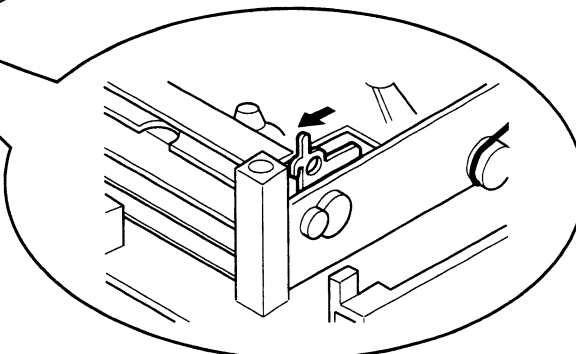


Fig. 3

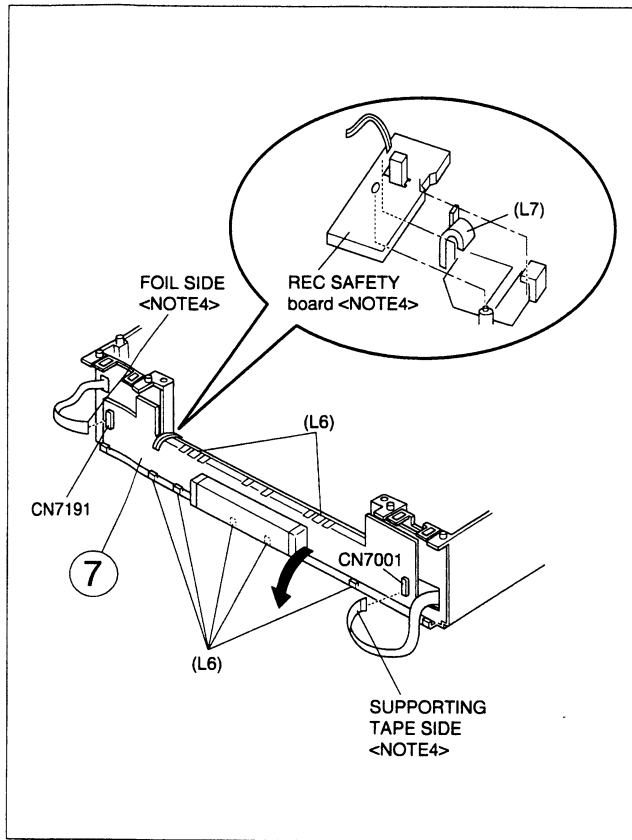


Fig. D7

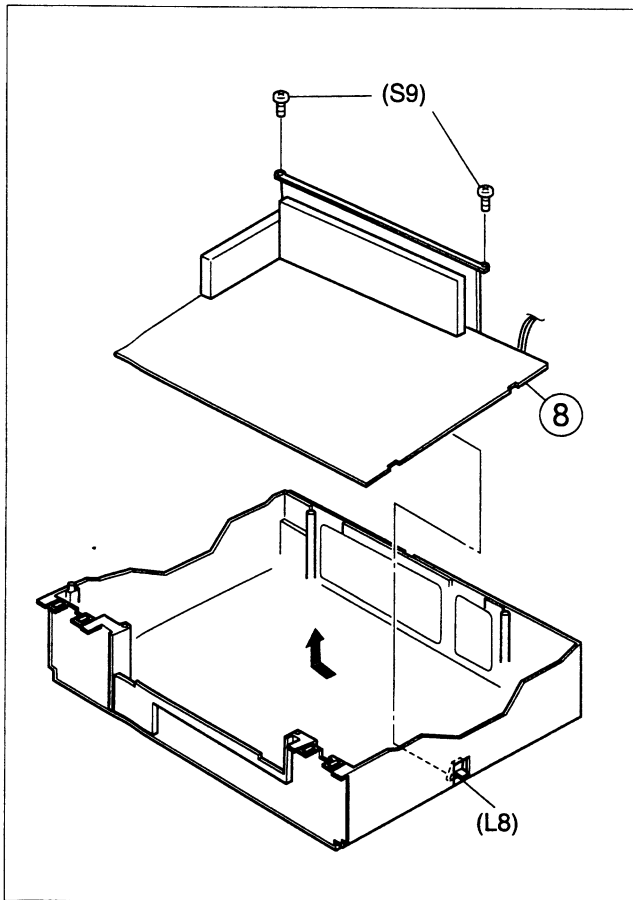


Fig. D8

1.4 SERVICE POSITION

In order to facilitate diagnosis and the repair of the Main deck assembly, this unit is constructed so as to allow the Main deck and the Main board assemblies to be removed together from the Chassis assembly.

1.4.1 How to take out the Mechanism and Main board assemblies

- (1) Remove the Top cover, Bracket and Front panel assembly. (See 1.3 DISASSEMBLY/ASSEMBLY METHOD. Take care not to pull the drum wire (Fig.D5) from CN1).
- (2) Lower the cassette holder, and make the preparations required in order to remove the screws from the Main deck assembly (Refer to the "Procedures for Lowering the Cassette holder assembly" on pages 1-3 of 1.3 DISASSEMBLY/ASSEMBLY METHOD).
- (3) Take out 2 screws (A) and 2 screws (B) as shown in Fig. 1-4-1.
- (4) Remove the flat wires from CN7162 and CN3005 on the Main board assembly.

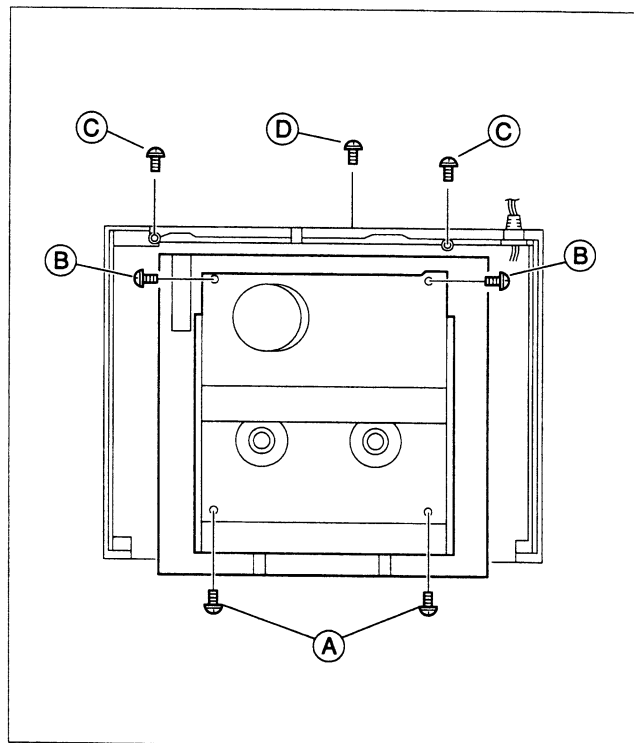


Fig. 1-4-1

- (5) Take out 2 screws (C) and take out 1 screw (D) to install the Bottom cover (See Fig. 1-4-1).
- (6) Remove the hook (E) while holding the edge of the Main board, and remove the Main board and Main deck assemblies together. At this stage be careful of the power cord and prongs of the jacks on the back side (See Fig. 1-4-2).
- (7) Remove the Display board assembly and the REC safety board (See 1.3 DISASSEMBLY/ASSEMBLY METHOD), then place them on the front side of the Main deck assembly and the Main board assembly which have been disassembled by procedure (6), and insert the flat wires into CN7162 and CN3005 of the Main board (see Fig.1-4-3).

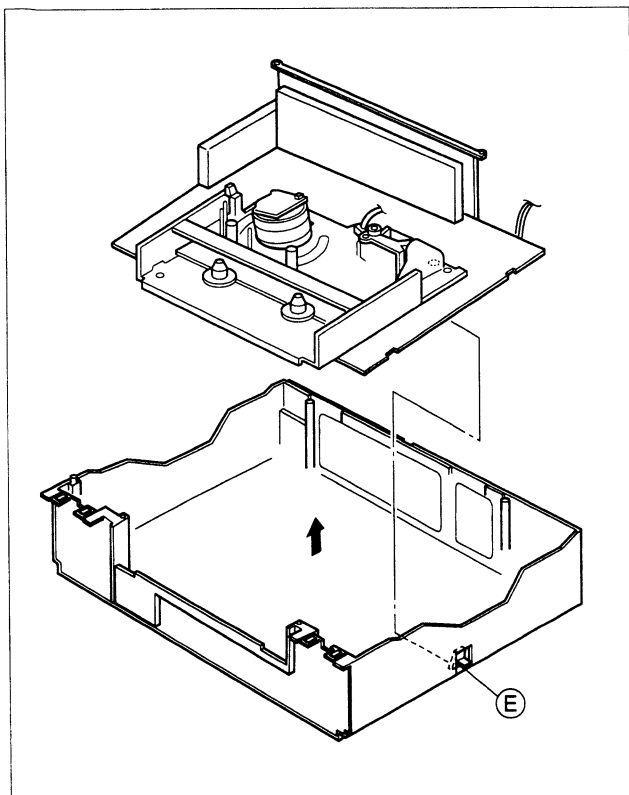


Fig. 1-4-2

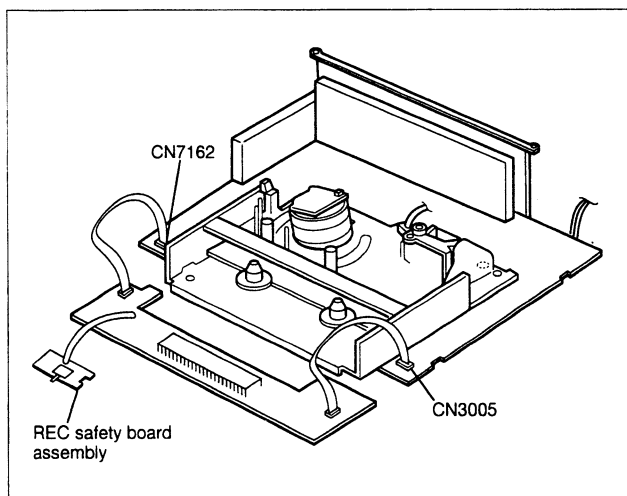


Fig. 1-4-3

1.4.2 Precautions for cassette loading in the "SERVICE POSITION"

The REC safety board assembly detects cassette loading as well as cassette tabs. Therefore, after the assembly has been removed in the "SERVICE POSITION", it is required to set the switch manually on the Rec. safety board assembly when a cassette is loaded.

1.4.3 Cassette loading and ejection methods in the "SERVICE POSITION" (See Fig. 1-4-3).

- (1) Insert a cassette halfway in the Cassette holder assembly.
- (2) Set the switch on the REC safety board assembly to ON (by pressing the switch).
- (3) As soon as the cassette starts to be loaded, set the switch on the REC safety board assembly to OFF (by releasing the switch).
- (4) Now the desired operation (recording, playback, fast forward, rewind, etc.) is possible in this status (the status shown in Fig.1-4-3).

NOTES:

- When performing diagnostics of the tape playback or the recording condition in the "SERVICE POSITION", enter the desired mode before turning the set upside down, and do not change the mode when performing diagnostics while the set is placed upside down. If you want to switch the mode, turn the set to the normal position (the status shown in Fig.1-4-3).

- In the "SERVICE POSITION", the cassette tabs cannot be detected and recording becomes possible even with a cassette with broken tabs such as the alignment tape. Be very careful not to erase important tapes.

- (5) The switch on the REC safety board assembly does not have to be operated when ejecting a tape. But be sure to turn the set to the normal position before ejecting the tape.

- (8) Plug the power cord into an AC outlet, and lift the cassette holder.
(Before turning on the power make sure that there is nothing which may produce a short circuit, such as faulty soldering.)

1.5 MECHANISM SERVICE MODE

This model has a unique function to enter the mechanism into every operation mode without loading of any cassette tape. This function is called the "MECHANISM SERVICE MODE".

1.5.1 How to set the "MECHANISM SERVICE MODE"

- (1) Unplug the power cord from an AC outlet.
- (2) Connect TPGND and TP7001 (TEST) on the Display board assembly using a jumper wire.
- (3) Plug the power cord into an AC outlet.
- (4) Set the power switch to ON.
- (5) With lock levers (A)(B) on the left and right sides of the Cassette holder assembly are pulled toward the front, slide the holder in the same direction as the cassette insertion direction. (For the positions of lock levers (A)(B), refer to the "Procedures for Lowering the Cassette holder assembly" on pages 1-3 of 1.3 DISASSEMBLY/ASSEMBLY METHOD.)
- (6) The cassette holder lowers and, when the loading has completed, the mechanism enters the desired mode.

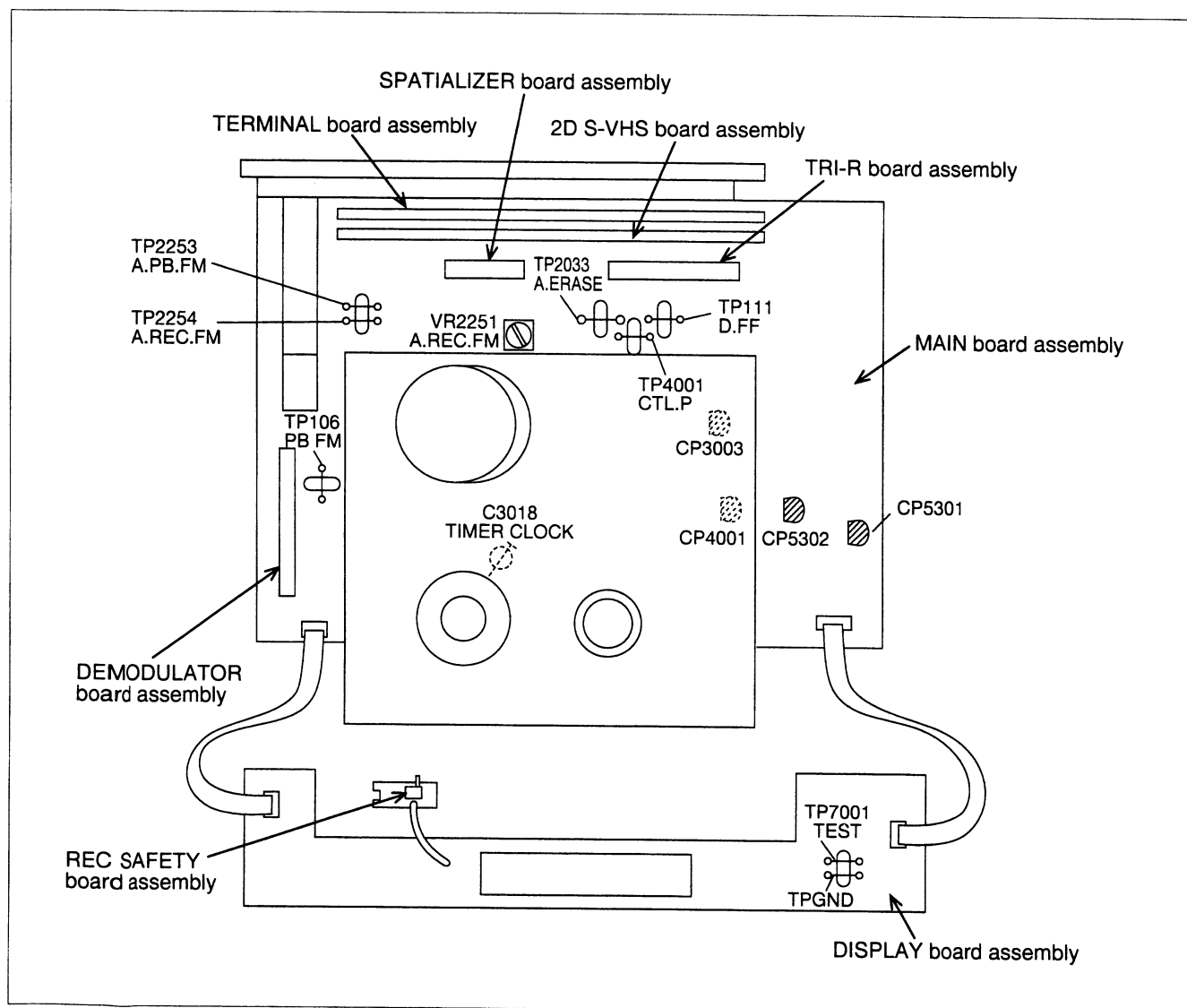


Fig. 1-5-1

1.6 EMERGENCY DISPLAY FUNCTION

This product has the function to store the last two previous emergency faults which can be displayed in the FDP when servicing.

1.6.1 How to display record of an emergency faults

Note: Put the unit into A mode by using the VCR remote control. (When it is in B mode, the preset remote control codes are not accepted.)

- (1) Press "N" button of the presetting unit more than 2 seconds and the two previous emergency faults are shown in the LED or FDP.
- (2) Press "N" button of the presetting unit again to return to the normal mode.

[Example] E : 01 : 03
 ↑ ↑
 Emergency fault before last
 Emergency fault of the last time

[Example] E : — : — ← No record of emergency

1.6.3 How to clear emergency record

Press the COUNTER RESET button on the remote controller in the emergency record display mode, and the record of the emergency fault(s) is cleared.

1.6.2 Detail of emergency faults

EMG DATA	Symptom	Detect mode	Resulting mode
E : 01	Loading motor rotates for more than 8 Sec without shift to next mode.	Loading	POWER OFF
E : 02	Loading motor rotates for more than 8 Sec without shift to next mode.	Unloading	POWER OFF
E : 03	TU REEL FG input is absent. (for more than 4 Sec)	REC/PLAY/FF/REW SEARCH FF/SEARCH REW	STOP → POWER OFF
E : 04	DRUM FF input is absent. (for more than 3 Sec)	REC/PLAY/FF/REW SEARCH FF/SEARCH REW	STOP → POWER OFF
E : 06	CAPSTAN FG input is absent. (for more than 4 Sec)	REC/PLAY/FF/REW SEARCH FF/SEARCH REW	STOP → POWER OFF
E : 07	No SWD5V/12V	POWER ON	POWER OFF

Table 1-6-1 EMERGENCY FAULTS

SECTION 2

MECHANISM ADJUSTMENT

2.1 BEFORE STARTING REPAIR AND ADJUSTMENT

2.1.1 Precautions

- (1) Unplug the power cable of the main unit before using your soldering iron.
- (2) Take care not to cause any damage to the conductor wires when plugging and unplugging the connectors.
- (3) Do not randomly handle the parts without identifying where the trouble is.
- (4) Exercise enough care not to hurt yourself, especially your finger nails, during the repair work.
- (5) When installing the front panel assembly, be sure to hook the lug on the back side of cassette door to the door opener of the cassette holder. If this operation is neglected it will not be possible to remove the cassette when ejecting because the housing door cannot be opened.

2.1.2 Checking for Proper Mechanical Operations

Enter the mechanism service mode when you want to operate the mechanism when no cassette is loaded. (See 1.5 MECHANISM SERVICE MODE)

2.1.3 Manually Removing the Cassette Tape

1. In case of electrical failures

If you cannot remove the cassette tape which is loaded because of any electrical failure, manually remove it by taking the following steps.

- (1) Unplug the power cable and remove the top cover, bracket and front panel assembly. (See 1.3 DISASSEMBLY/ASSEMBLY METHOD)
- (2) Unload the cassette by manually turning the unloading motor of the main deck assembly toward the front. In doing so, hold the tape by the hand to keep the slack away from any grease. (See Fig.2-1-1)
- (3) Bring the pole base assembly (on the supply or take-up side) to a pause when it reaches the position where it is hidden behind the cassette tape.
- (4) Move the top plate toward the drum while holding down the lug **A** of the bracket retaining the top plate. Likewise hold part **B** down and remove the top plate. The spring plate **C** is then brought under the cassette lid. Then remove the top plate by pressing the whole cassette tape down. (Note 1) (See Fig.2-1-2).
- (5) Remove the cassette tape by holding both the slackened tape and the cassette lid.
- (6) Take up the slack of the tape into the cassette. This completes removal of the cassette tape.

Note: The spring plate of the top plate is sharp-edged. Take care not to hurt yourself.

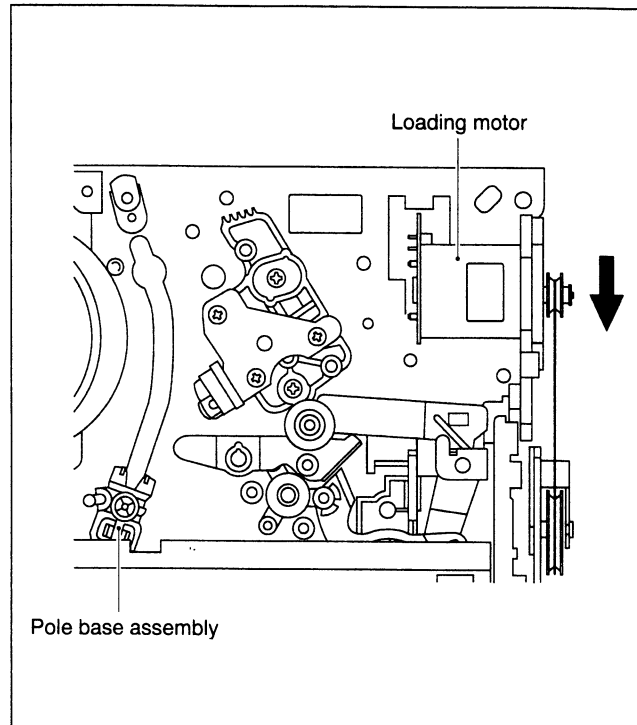


Fig. 2-1-1

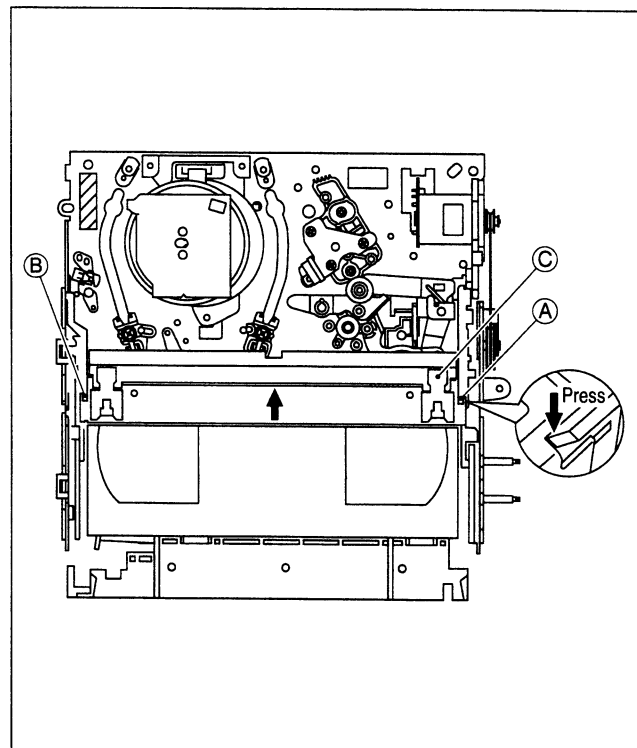


Fig. 2-1-2

2. In case of mechanical failure

If you cannot remove the cassette tape which is loaded because of any mechanical failure, manually remove it by taking the following steps.

- (1) Unplug the power cable and remove the top cover, bracket and front panel assembly (See 1.3 DISASSEMBLY/ASSEMBLY METHOD).
- (2) While keeping the tension arm of the main deck assembly free from tension, pull the tape on the pole base assembly out of the guide roller (on the supply or take-up side) (See Fig.2-1-3).
- (3) Remove the top plate as done in Step (4) of "1 In case of electrical failures" and remove the guide pole cap at the same time. (See Fig.2-1-4).
- (4) While lifting the cassette tape lid, hold the cassette tape case and pinch roller by the fingers and move them toward the loading motor to relieve pressure on the tape. Then remove the tape while taking the cassette case out of the cassette holder. (See Fig.2-1-4).
- (5) Re-place the guide pole cap and take up the slack of the tape into the cassette.

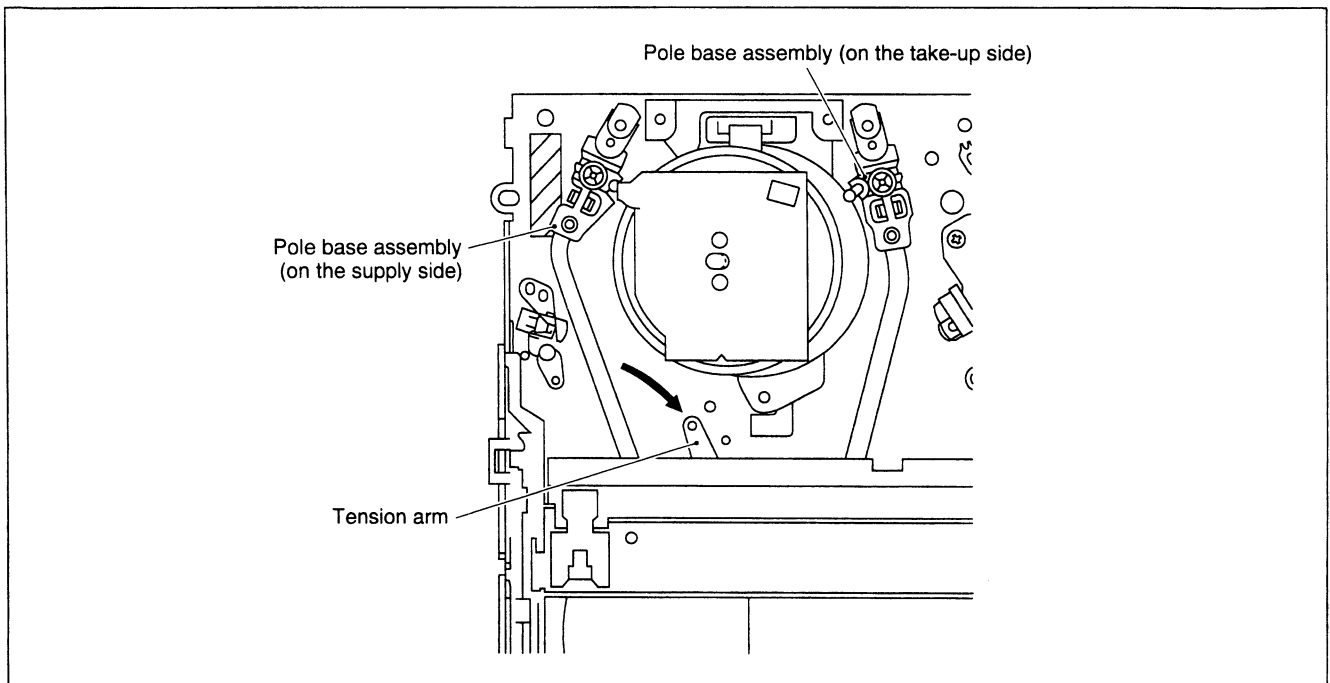


Fig. 2-1-3

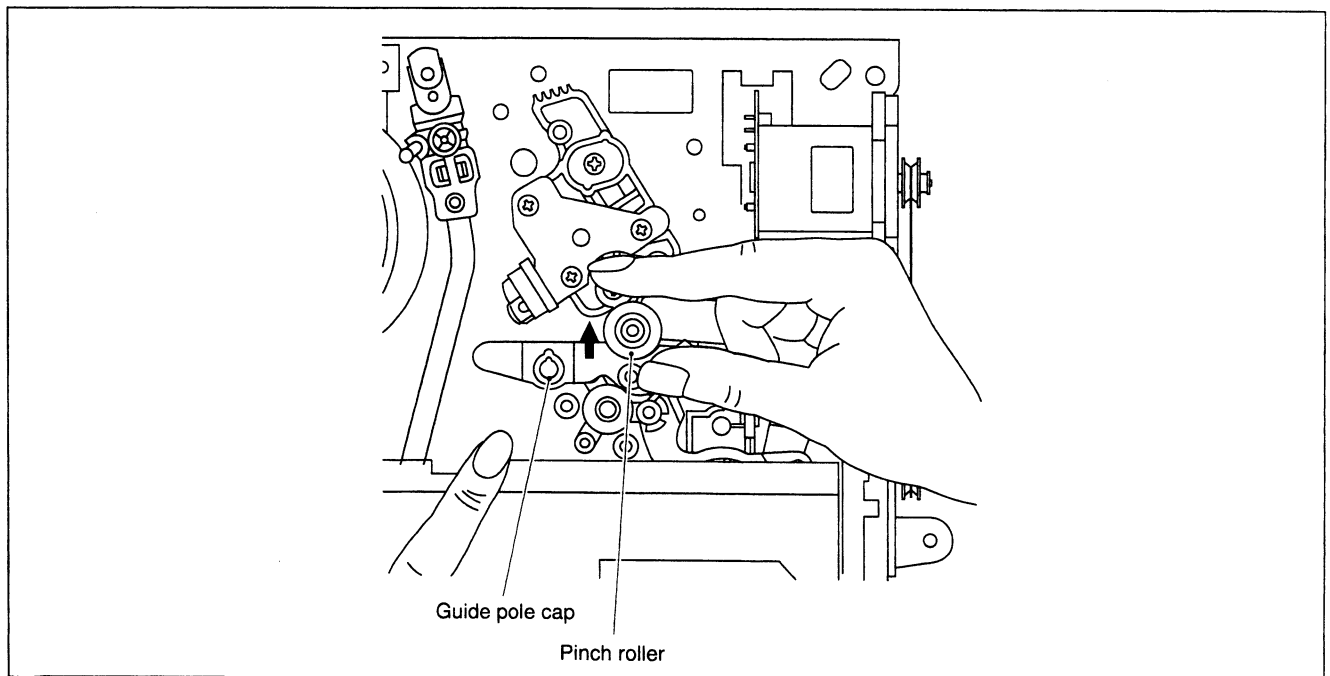


Fig. 2-1-4

2.1.4 Jigs and Tools Required for Adjustment

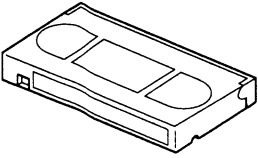
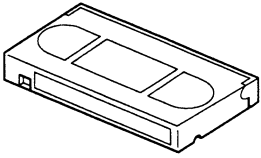
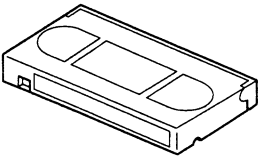
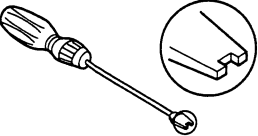
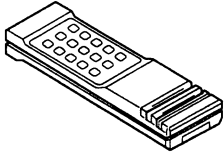
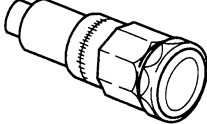
Alignment tape (SP) MHPE	Alignment tape (LP) MHPE-L	Back tension cassette gauge PUJ48076-2	A/C head position bit PTU94010
			
Roller driver PTU94002	Presetting unit PTU94008	Torque gauge PUJ48075-2	
			

Table 2-1-1 Jigs and tools required for adjustment

2.1.5 Maintenance and Inspection

1. Location of major mechanical parts

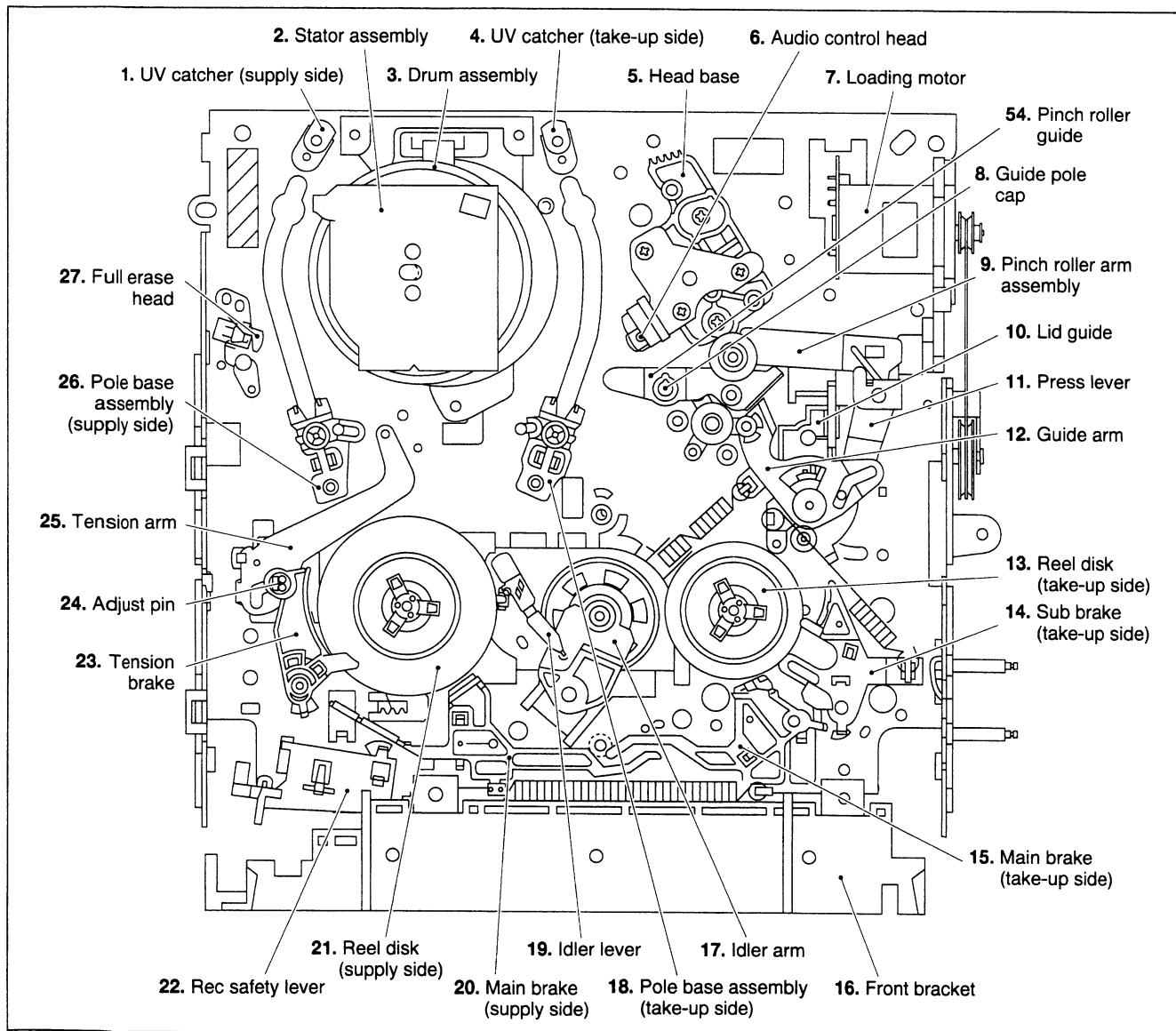


Fig. 2-1-5 Main deck top side

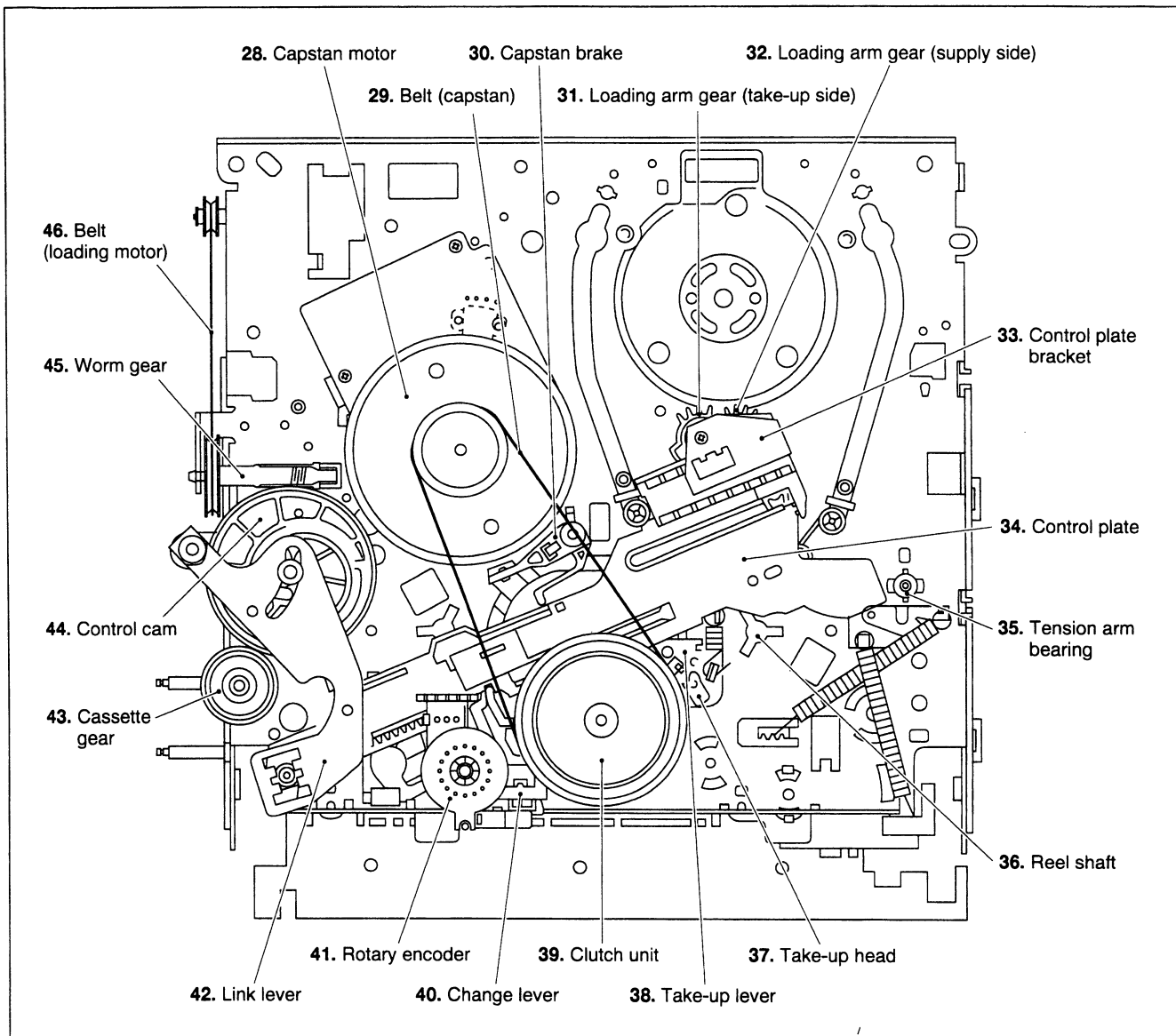


Fig. 2-1-6 Main deck bottom side

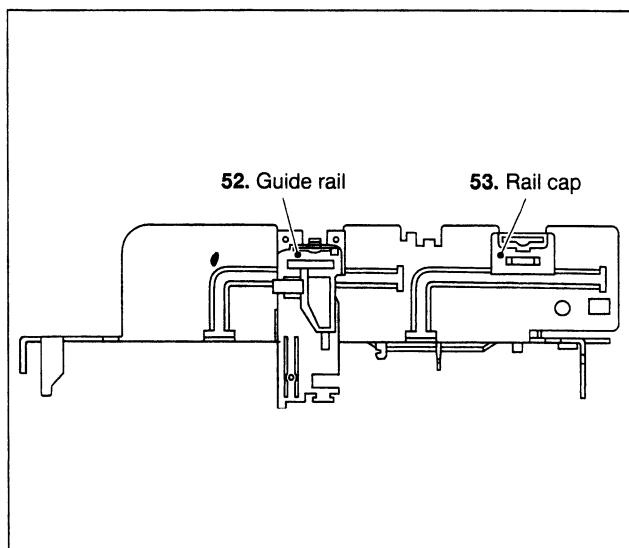


Fig. 2-1-7 Main deck left side

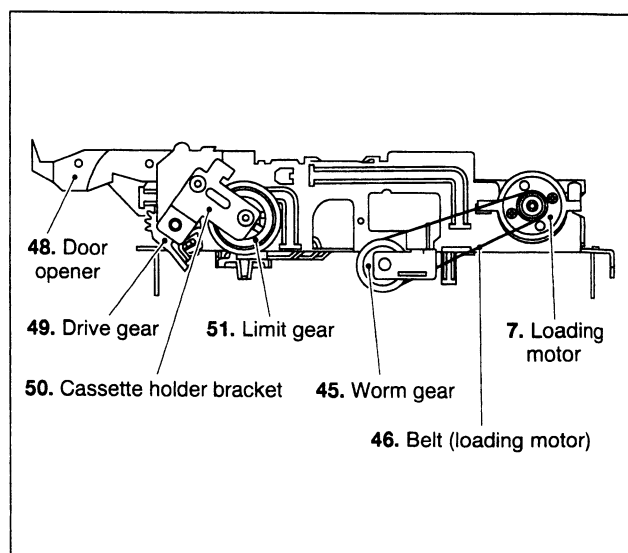


Fig. 2-1-8 Main deck right side

Note: Numerals at the start of the parts names are identical with those of the location diagrams of the major mechanical parts, 1 - 18 of which denote the order of removal. Of the alphabets T and B next to the parts names, T denotes removal from the main deck top side, B from the bottom side and T/B from both sides.

			1,4	12	53	46	9	52	11	50	-	-	-	49	32	-	-	38	25	23	31	16	21	42	41	29	39	40	33	34	14	19	54	
	Removable parts names		UV catcher	Guide arm assembly	Rail cap	Belt (loading motor)	Pinch roller arm assembly	Guide rail	Press lever assembly	Cassette Holder bracket	Opener guide	Relay gear	Cassette holder assembly	Drive gear	Loading arm gear (supply side)	Drive arm assembly	Tension spring	Take-up lever	Tension arm assembly	Tension brake assembly	Loading arm gear (take-up side)	Front bracket	Reel base (supply side)	Link lever	Rotary encoder	Belt (capstan motor)	Clutch unit	Change lever	Control plate bracket	Control plate	Sub brake	Idler lever	Pinch roller guide	
17	Idler arm	T			1			2	3	4	5	6	7	8						9		10	11	12	13	14	15	16	17			18		
15	Main brake (take-up side)	T/B			1			2	3	4	5	6	7	8								9	10	11	12	13	14	15	16	17				
13	Reel disk (take-up side)	T			1			2	3	4	5	6	7	8								9	10	11	12	13	14	15	16	17				
19	Idler lever	T/B			1			2	3	4	5	6	7	8						9		10	11	12	13	14	15	16	17					
-	Rotary encoder guide	T/B			1			2	3	4	5	6	7	8								9	10	11	12	13	14	15	16	17				
14	Sub brake (take-up side)	T/B			1			2	3	4	5	6	7	8								9	10	11	12	13	14	15	16					
-	Loading arm gear shaft	B													8						9		1	2	3	4	5	6	7					
35	Tension arm bearing	T			1			2	3	4	5	6					8		9	7														
-	Control plate guide	T/B																8						1	2	3	4	5	6	7				
37	Take-up head	B																8						1	2	3	4	5	6	7				
31	Loading arm gear (take-up side)	B													8									1	2	3	4	5	6	7				
25	Tension arm assembly	T/B			1			2	3	4	5	6					8			7														
20	Main brake (supply side)	T/B			1			2	3	4	5	6	7	8																				
38	Take-up lever	T/B																																
32	Loading arm gear (supply side)	B																						1	2	3	4	5	6	7				
21	Reel disk (supply side)	T			1			2	3	4	5	6	7											1	2	3	4	5	6	7				
-	Drive arm assembly	T			1			2	3	4	5	6	7																					
30	Capstan brake	T/B																						1	2	3	4	5	6	7				
34	Control plate	B																						1	2	3	4	5	6					
23	Tension brake assembly	T/B			1			2	3	4	5	6																						
-	Cassette holder assembly	T			1			2	3	4	5																							
-	Direct gear	B																							1	2	3	4						
10	Lid guide	T		1			2		3																									
40	Change lever	B																								1	2	3						
49	Drive gear	T								1	2	3																						
11	Press lever assembly	T		1			2																											
-	Relay gear	T								1	2																							
51	Limit gear assembly	T								1	2																							
26	Pole base assembly (supply side)	T/B	1																															
18	Pole base assembly (take-up side)	T/B	1																															
-	Tension spring (Main brake)	T																					1											
22	Rec safety lever	T/B																																

2. Cleaning

Regular cleaning of the transport system parts is desirable but practically impossible. So make it a rule to carry out cleaning of the tape transport system whenever the machine is serviced.

When the video head, tape guide and/or brush get soiled, the playback picture may appear inferior or at worst disappear, resulting in possible tape damage.

- (1) When cleaning the upper drum (especially the video head), soak a piece of closely woven cloth or Kimu-wipe with alcohol and while holding the cloth onto the upper drum by the fingers, turn the upper drum counterclockwise.

Note: *Absolutely avoid sweeping the upper drum vertically as this will cause damage to the video head.*

- (2) To clean the parts of the tape transport system other than the upper drum, use a piece of closely woven cloth or a cotton swab soaked with alcohol.
- (3) After cleaning, make sure that the cleaned parts are completely dry before using the video tape.

3. Lubrication

With no need for periodical lubrication, you have only to lubricate new parts after replacement. If any oil or grease on contact parts is soiled, wipe it off and newly lubricate the parts.

- (1) See the mechanism assembly and disassembly diagrams (M4) for the lubricating or greasing spots. See Table 2-1-2 for the types of oil or grease to be used.

Type	Name	Serial No.	Symbols on the dis-assembly diagrams
Grease	Maltemp SH-P	KYODO-SH-P	AA
Oil	Cosmohydro HV56	COSMO-HV56	BB

Table 2-1-2 Grease and oil used for the unit

4. Suggested servicing schedule for main components

The following table indicates the suggested period for such service measures as cleaning, lubrication and replacement. In practice, the indicated periods will vary widely according to environmental and usage conditions. However, the indicated components should be inspected when a set is brought for service and the maintenance work performed if necessary. Also note that rubber parts may deform in time, even if the set is not used.

System	Parts Name	Operation Hours	
		~1000H	~2000H
Tape transport	Upper drum assembly	★○	○
	A/C head	★○	★○
	Lower drum assembly	★	★○
	Pinch roller arm assembly	★	★
	Full erase head	★	★
	Tension arm assembly	★	★
	Capstan motor (Shaft)	★	★
	Guide arm assembly	★	★
Drive	Capstan motor		○
	Capstan brake		○
	Main brake		○
	Belt (Capstan)	○	○
	Belt (Loading motor)		○
	Loading motor		○
	Clutch unit		○
	Worm gear assembly		○
	Control plate		○
Other	Brush assembly	★○	★○
	Tension brake	○	○
	Rotary encoder		○

★: Cleaning

○: Inspection or Replacement if necessary

Table 2-1-3

2.2 REPLACEMENT OF MAJOR PARTS

2.2.1 Before Starting Disassembling

This unit is provided with a mechanism assembly mode. It is therefore necessary to enter this mode for assembling and disassembling procedures.

This mode is usually not in use, manually set it when it is required.

2.2.2 How to Set the Mechanism Assembling Mode

Remove the main deck assembly and place it bottom side up. (See SECTION 1 DISASSEMBLY). Turn the worm gear toward the front so that the register hole of the control cam is brought into alignment with the hole at the main deck assembly chassis. This position renders the mechanism assembling mode operational. Make sure that the control plate is located in alignment with the mark E. (See Fig.2-2-1)

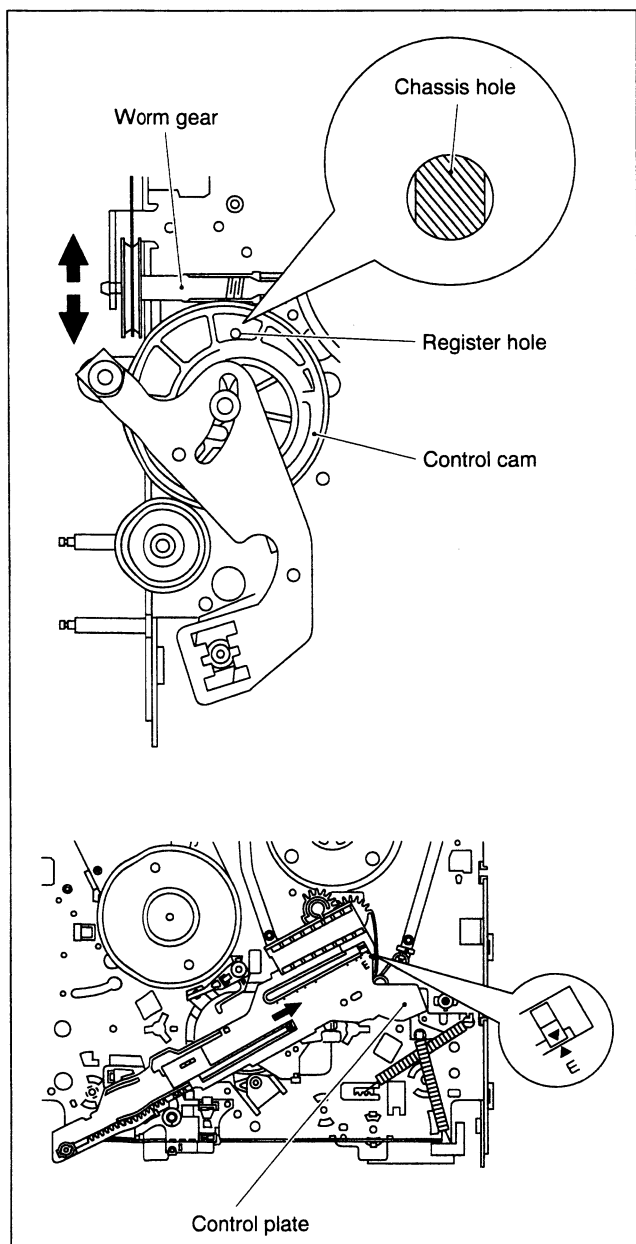


Fig. 2-2-1

2.2.3 Cassette Holder Assembly

1. How to remove

(1) Remove the guide rail and rail cap. (See Fig.2-2-2).

(2 lugs on the guide rail and one lug on the rail cap)

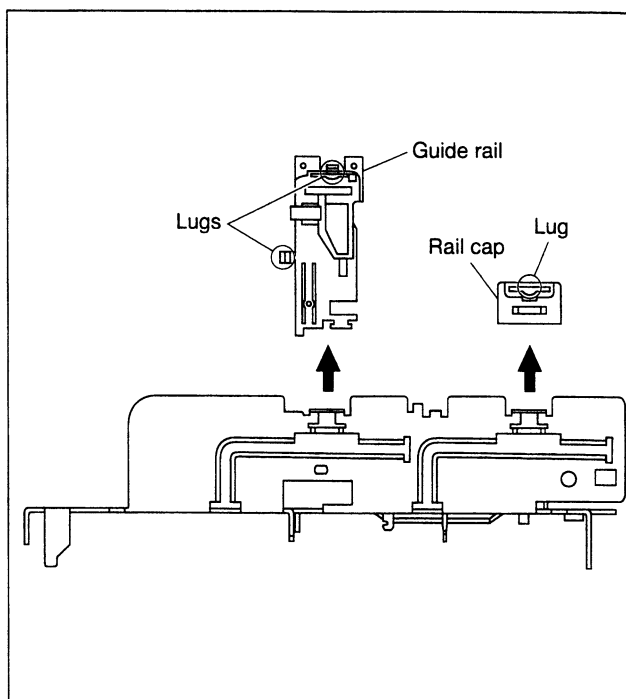


Fig. 2-2-2

(2) Remove the two slit washers and remove the cassette holder bracket. (See Fig.2-2-3)

(3) Remove the opener guide, relay gear and limit gear. (See Fig.2-2-3)

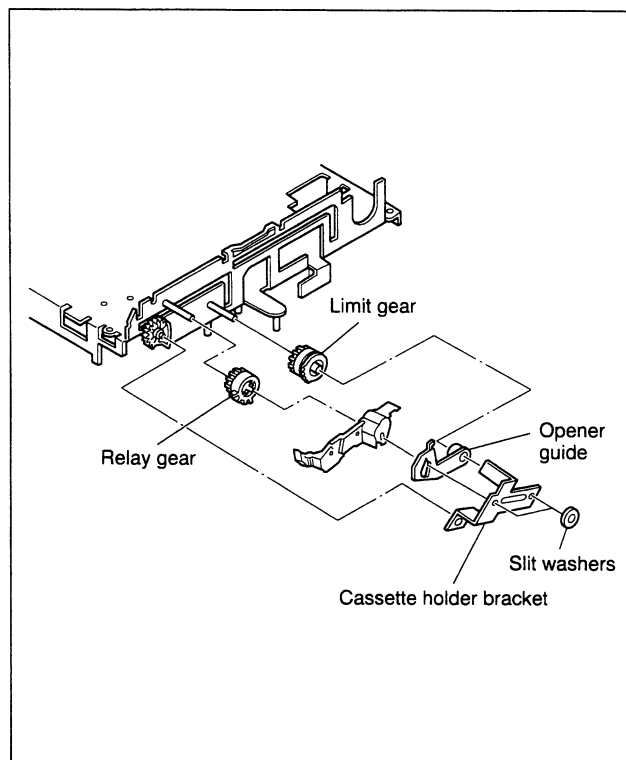


Fig. 2-2-3

(4) While swinging the lock levers (R) and (L) of the cassette holder assembly toward the front, slide the cassette holder assembly until its legs come to where the guide rail and the rail cap have been removed (so that the drive arm is upright). (See Fig.2-2-4)

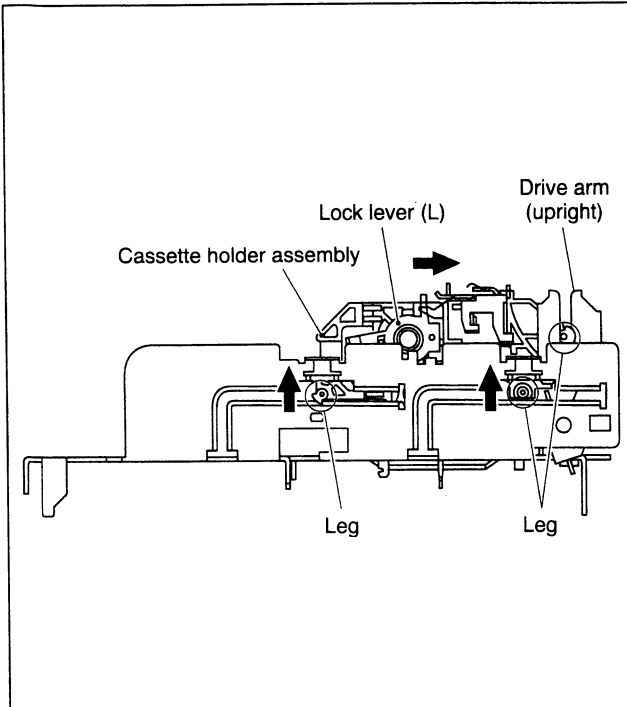


Fig. 2-2-4

(5) While holding the left side of the cassette holder, lift the cassette holder assembly so that the three legs on the left side are all released. Then pull the legs ① and ② on the right side out of the rail and also pull up the leg ③. (See Fig.2-2-5, Fig.2-2-6)

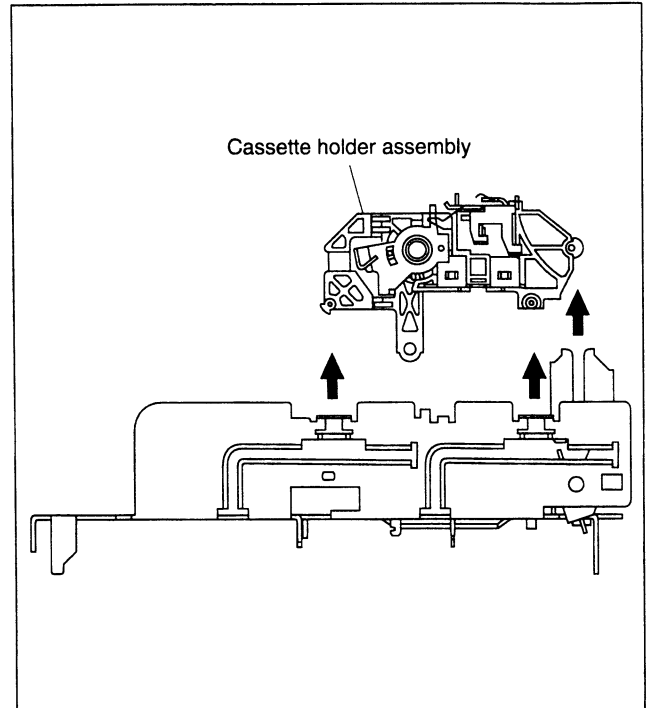


Fig. 2-2-5

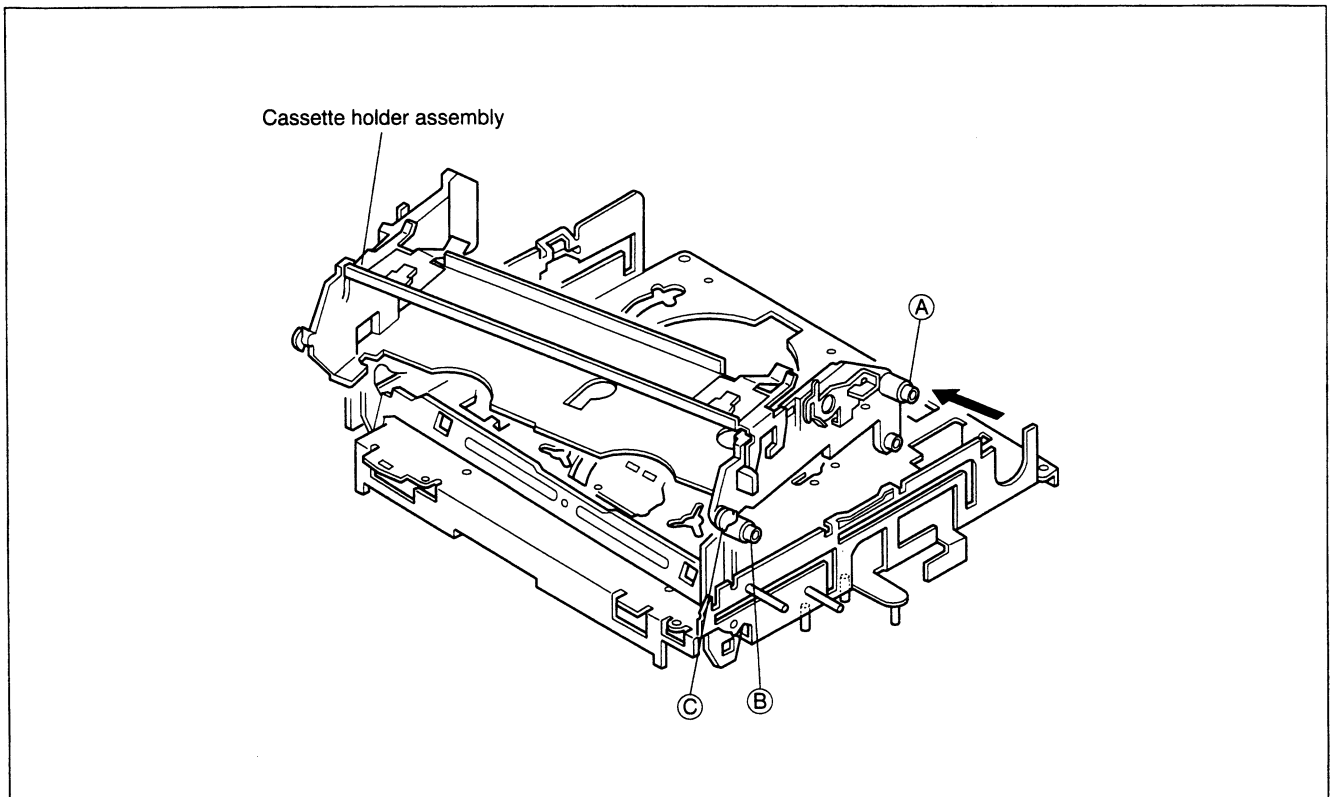


Fig. 2-2-6

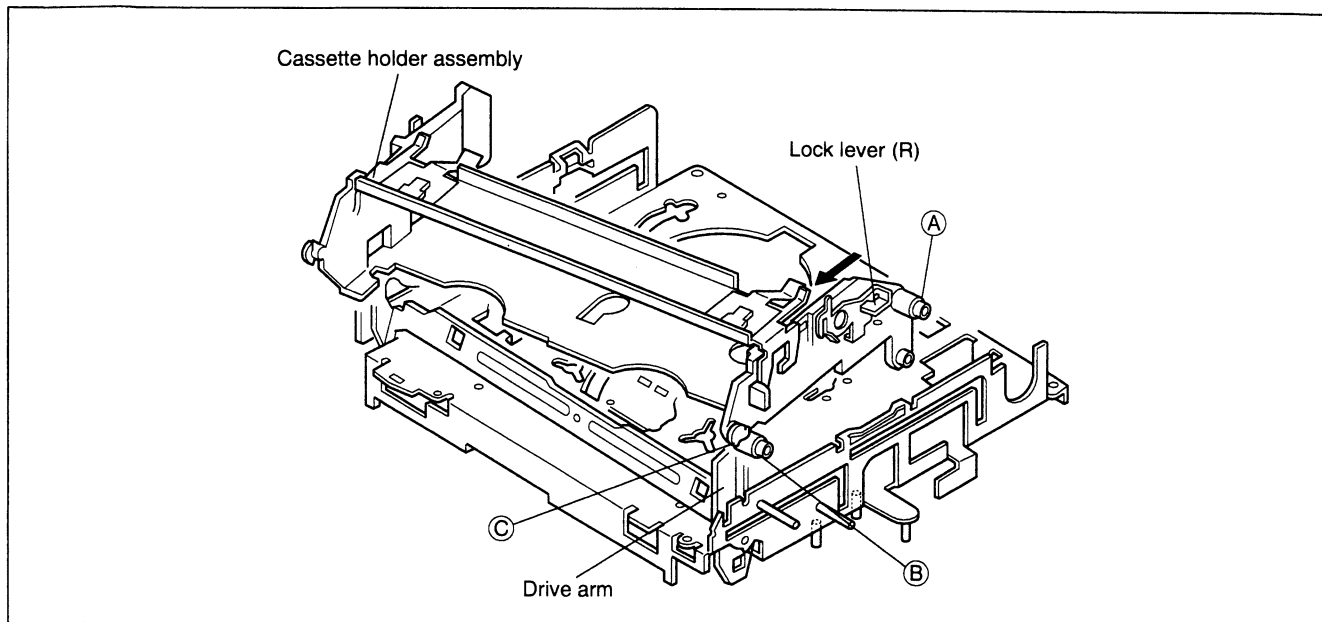


Fig. 2-2-7

2. How to install

- (1) Hold the drive arm upright and fit the leg ③ on the right side of the cassette holder assembly into the groove. (See Fig.2-2-7)
- (2) While swinging the lock lever (R) of the cassette holder assembly toward front, put the legs ① and ② into the rail. (See Fig.2-2-7)
- (3) Drop the three legs on the left side of the cassette holder into the groove at one time. (See Fig.2-2-8)
- (4) Slide the whole cassette holder toward the front to bring it to the eject end position.
- (5) Install the limit gear so that the notch on the outer circumference of the limit gear is brought into alignment with the register hole on the main deck. (See Fig.2-2-9)
- (6) Install the relay gear so that the notch on the outer circumference of the relay gear is brought into alignment with the notch on the main deck. It is important at this stage that the register hole at the limit gear, the register hole at the relay gear and the register hole at the drive gear are all in alignment. (See Fig.2-2-9).
- (7) Install the door stopper, opener guide and cassette holder bracket and fasten the two slit washers.

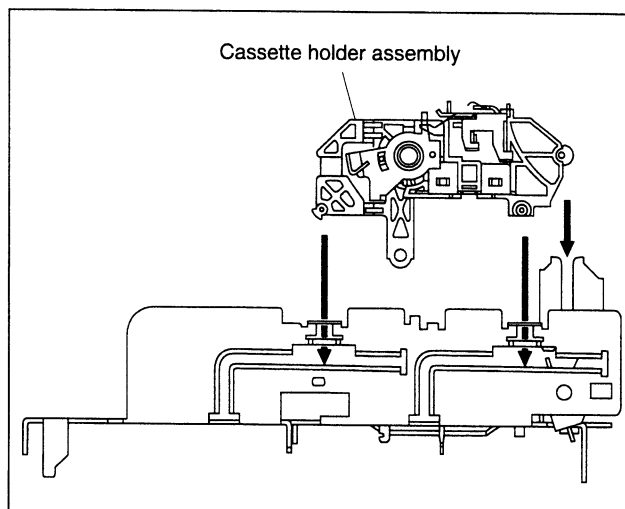


Fig. 2-2-8

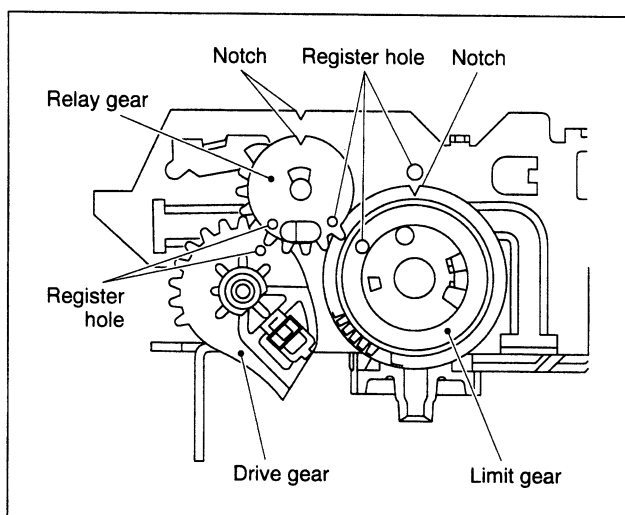


Fig. 2-2-9

2.2.4 Pinch Roller Arm Assembly

1. How to remove

- (1) Remove the spring from the hook of the press lever.
- (2) Remove the slit washer and remove the pinch roller seat.
(See Fig.2-2-10)
- (3) Remove the pinch roller arm assembly by pulling it up.

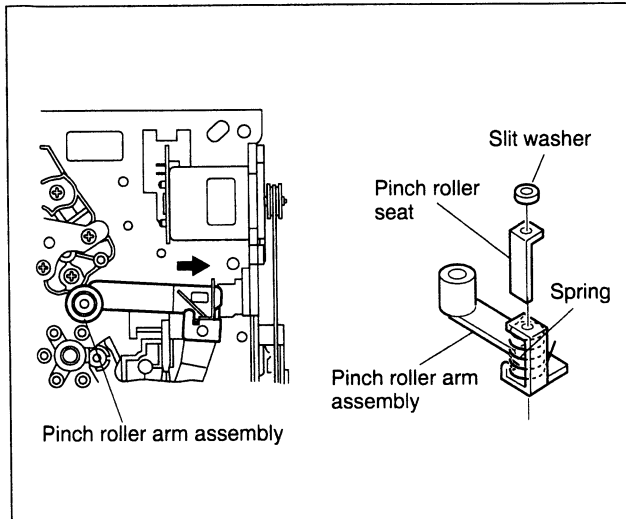


Fig. 2-2-10

2.2.5 Guide Arm and Press Lever

1. How to remove

- (1) Remove the spring and expand the lug of the lid guide in the arrow-indicated direction. Then remove the guide arm by pulling it up.
- (2) Remove the press lever by pulling it up. (See Fig.2-2-11)

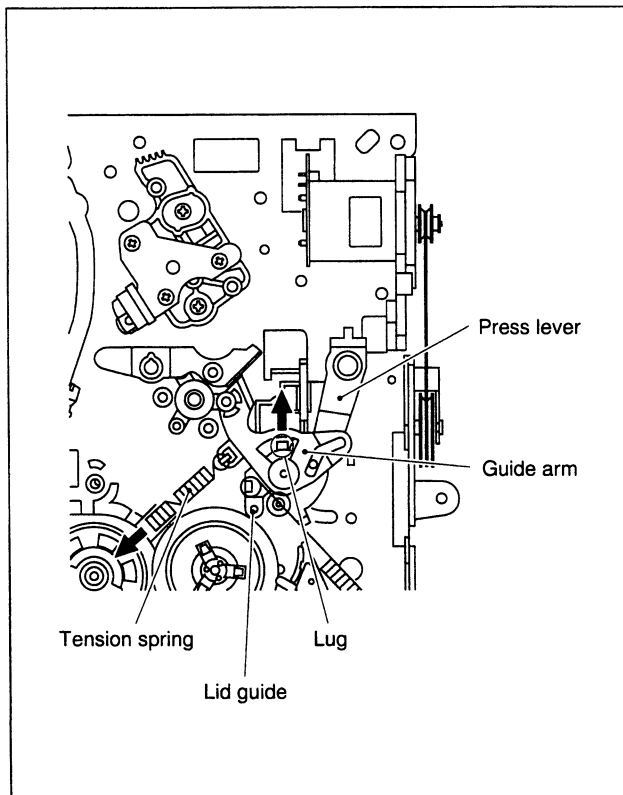


Fig. 2-2-11

2.2.6 Audio Control Head

1. How to remove

- (1) Remove two screws (A) and remove the audio control head together with the head base.

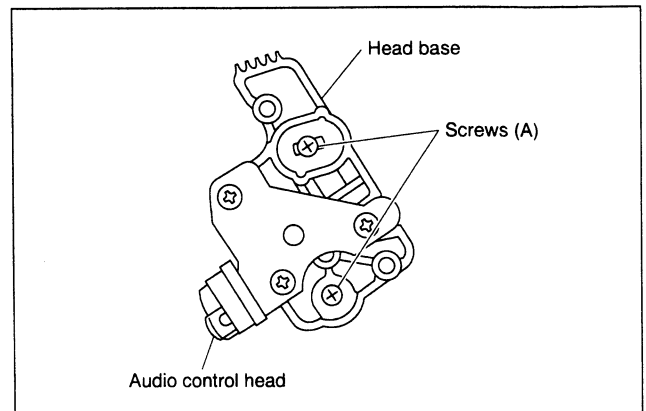


Fig. 2-2-12

- (2) When replacing only the audio control head, remove the three screws (B) while controlling the compression spring.

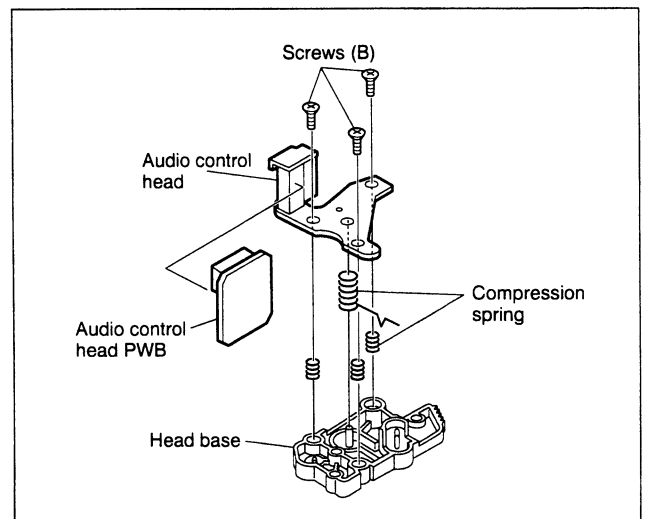


Fig. 2-2-13

2. How to install

- (1) To make the post-installation adjustment easier, set the temporary level as indicated in Fig.2-2-14. Also make sure that the screw center is brought into alignment with the center position of the slot.

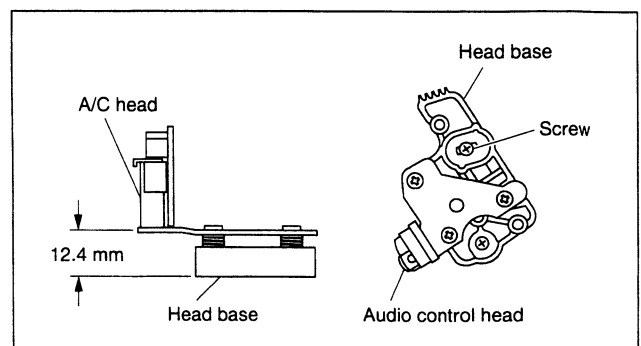


Fig. 2-2-14

2.2.7 Loading Motor

1. How to remove

- (1) Remove the belt wound around the worm gear.
- (2) Open the two lugs of the motor guide and remove the loading motor, loading motor PWB and motor guide altogether by pulling them up.
- (3) When replacing the motor base, take care with the orientation of the motor (so that the label faces upward).
- (4) When the motor pulley has been replaced, choose the fitting dimension as indicated in Fig.2-2-15.

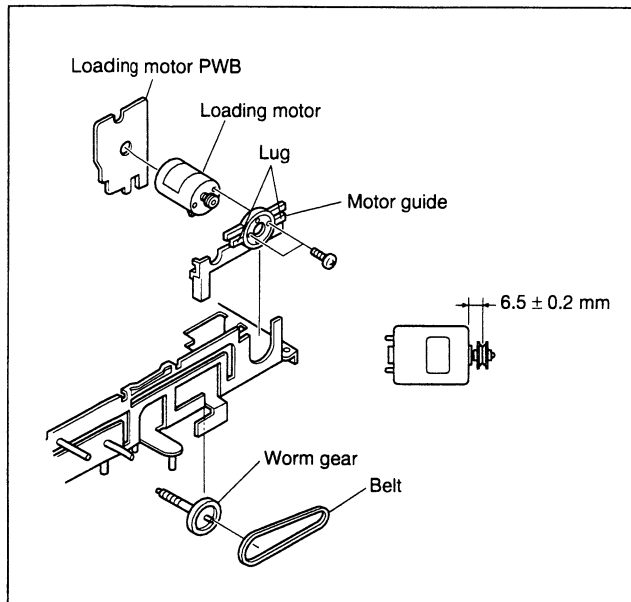


Fig. 2-2-15

2.2.8 Capstan Motor

1. How to remove

- (1) Remove the belt (capstan) on the main deck back side.
- (2) Remove three screws (A) and remove the capstan motor.

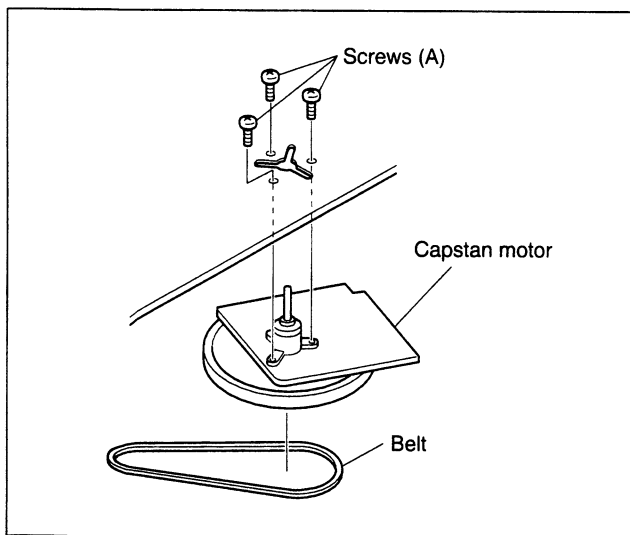


Fig. 2-2-16

2. How to install

Please refer to page 2-25.

2.2.9 Pole Base (on the supply or take-up side)

1. How to remove

- (1) Remove the UV catcher on the removal side by loosening one screw (A).
- (2) Remove the pole base on the supply side from the main deck by loosening one screw (B) on the main deck back side and sliding the pole base toward the UV catcher.
- (3) As for the pole base on the take-up side, turn the pulley of the loading motor to lower the cassette holder because the screw (B) is hidden under the control plate (See the "Procedures for Lowering the Cassette holder assembly" on page 1-3 of 1.3 DISASSEMBLY/ASSEMBLY METHOD). Further turn the motor pulley to move the cassette holder until the screw (B) is no longer under the control plate (in the half-loading position). Then remove it as done for the supply side by removing one screw (B).

NOTE: After reinstalling the Pole base and the UV catcher, be sure to perform compatibility adjustment.

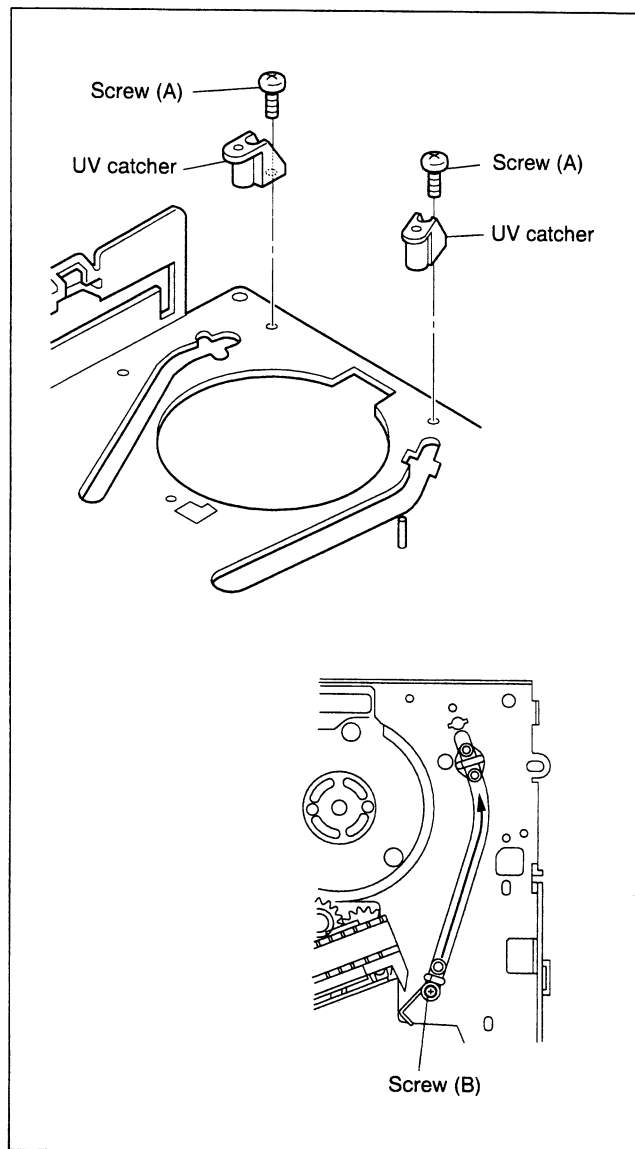


Fig. 2-2-17

2.2.10 Rotary Encoder

- (1) Remove one screw (A) and remove the rotary encoder by pulling it up.
- (2) When installing the rotary encoder, bring the register marks into alignment as indicated in Fig.2-2-18.

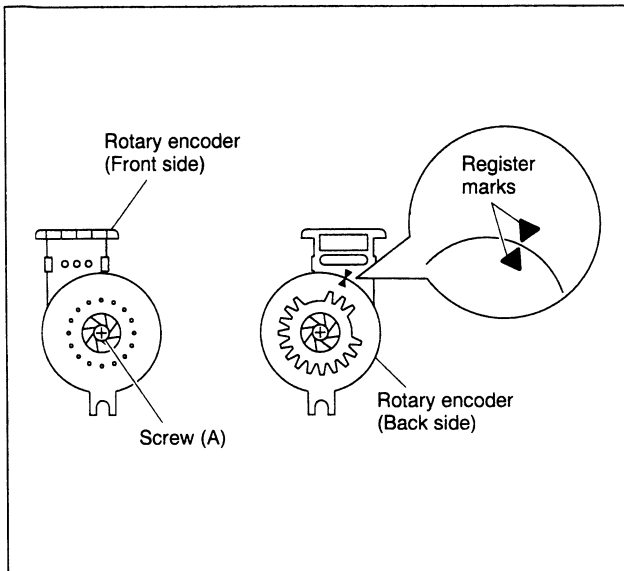


Fig. 2-2-18

2.2.11 Clutch Unit

- (1) Remove the belt wound around the capstan motor and the clutch unit.
- (2) Remove the slit washer and remove the clutch unit.

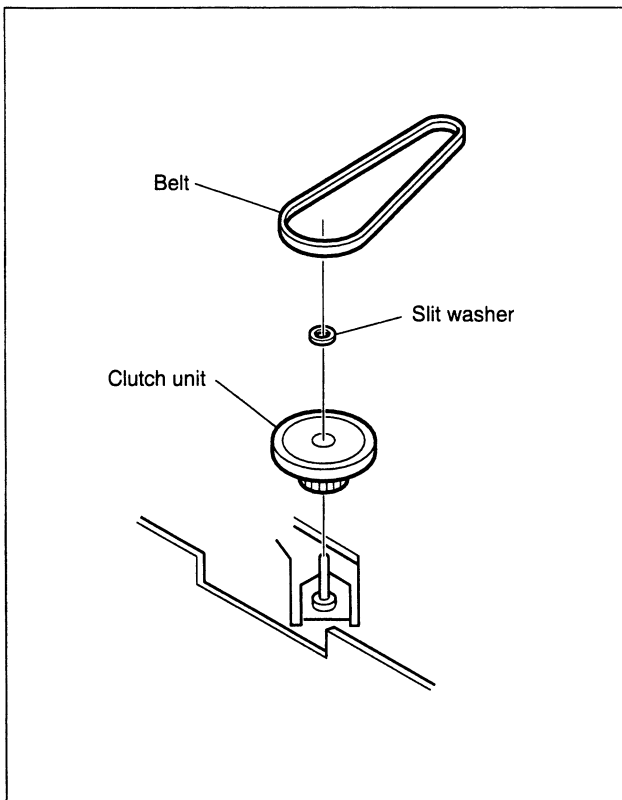


Fig. 2-2-19

2.2.12 Change Lever and Direct Gear

- (1) Release two lugs of the rotary encoder guide in the arrow-indicated direction and remove the change lever.
 - (2) Remove the slit washer retaining the direct gear and remove the latter.
- Take care of the two washers and one spring on and under the direct gear. (See Fig.2-2-20)

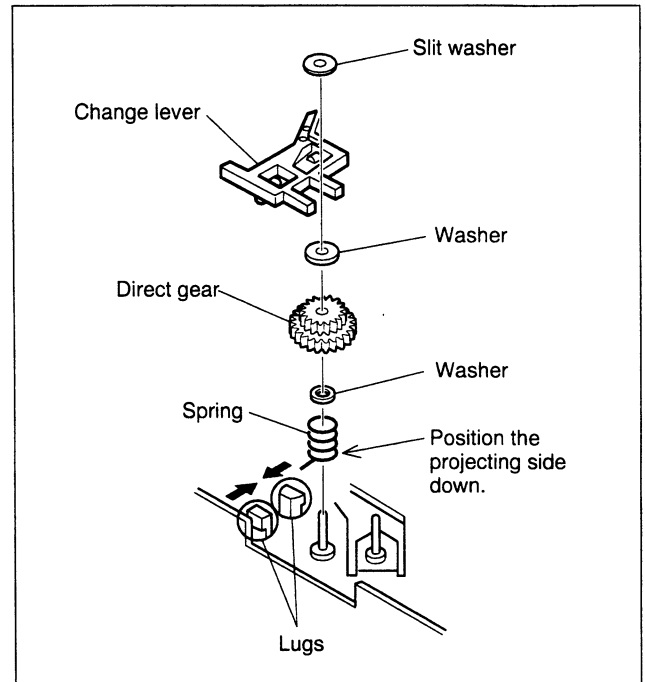


Fig. 2-2-20

2.2.13 Link Lever

- (1) Remove the two slit washers.
- (2) Remove the link lever by lifting it from the shaft retained by the slit washers. Then swing the link lever counterclockwise and remove it from the lock member of the control plate.

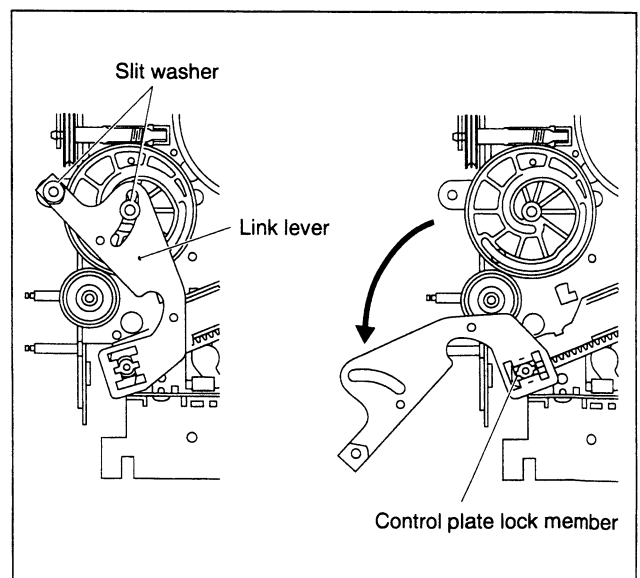


Fig. 2-2-21

2.2.14 Cassette Gear, Control Cam and Worm Gear

- (1) Remove the control cam by lifting it.
- (2) Open the two lugs of the cassette gear outward and pull the latter off.
- (3) Remove the belt wound around the worm gear and the loading motor.
- (4) Open the lug of the lid guide outward and remove the worm gear.
- (5) When installing the control cam, make sure that the register hole at the control cam is in alignment with the register hole of the main deck. (See Fig.2-2-22)

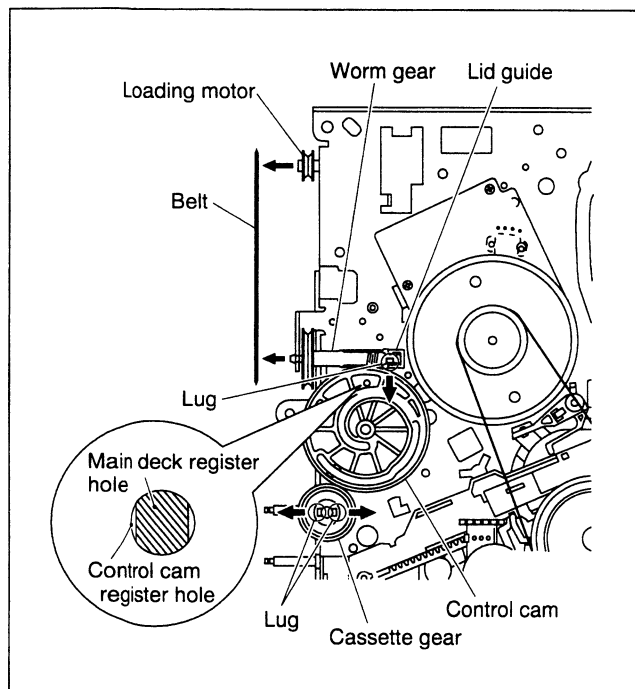


Fig. 2-2-22

2.2.15 Control Plate

1. How to remove

- (1) Remove one screw (A) retaining the control plate bracket and remove the latter.
- (2) Slide the control plate as indicated by the arrow and remove the control plate. (See Fig.2-2-23)

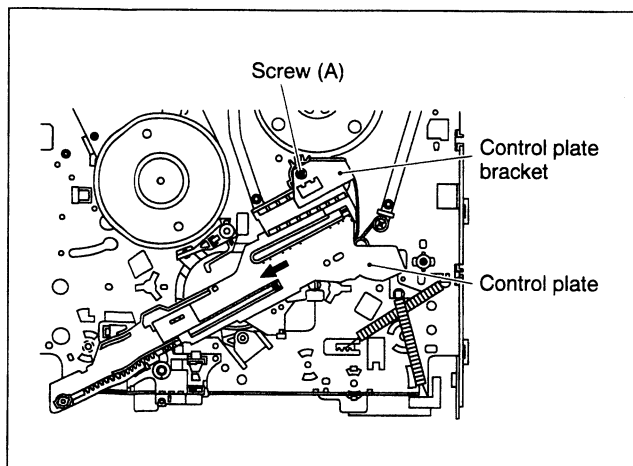


Fig. 2-2-23

2. How to install

- (1) Adjust the position of the idler arm pin as indicated in Fig.2-2-24. (to the left of center of the R section)
- (2) Bring the positioning hole of the take-up lever into alignment with the hole at the control plate guide and fix the position by inserting a 1.5 mm hexagonal wrench.
- (3) Press-fit the pole base (on the supply side) as indicated by the arrow and install the control plate so that section A of the loading arm gear shaft fits into hole (A) of the control plate, section B of the control plate guide into hole (B), and the control plate comes under section C of the rotary encoder guide and section D of the loading arm (on the take-up side). Then slide the whole control plate in the arrow-indicated direction. (See Fig.2-2-25).
- (4) Make sure that the mark E of the control plate is in alignment with the mark ▼ of the loading arm gear shaft. (See Fig.2-2-25)
- (5) Pull off the hexagonal wrench for positioning.

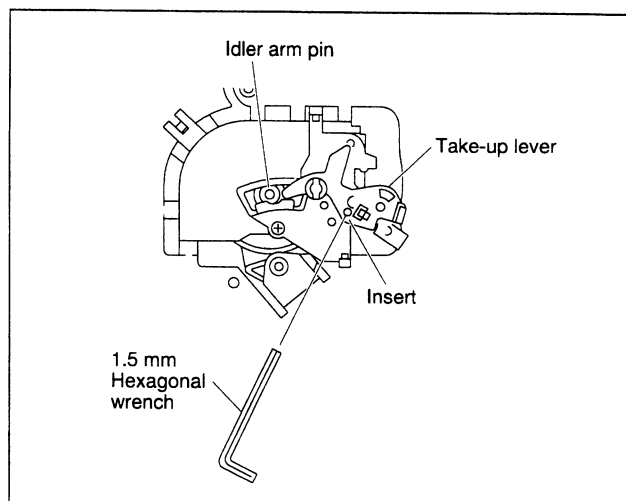


Fig. 2-2-24

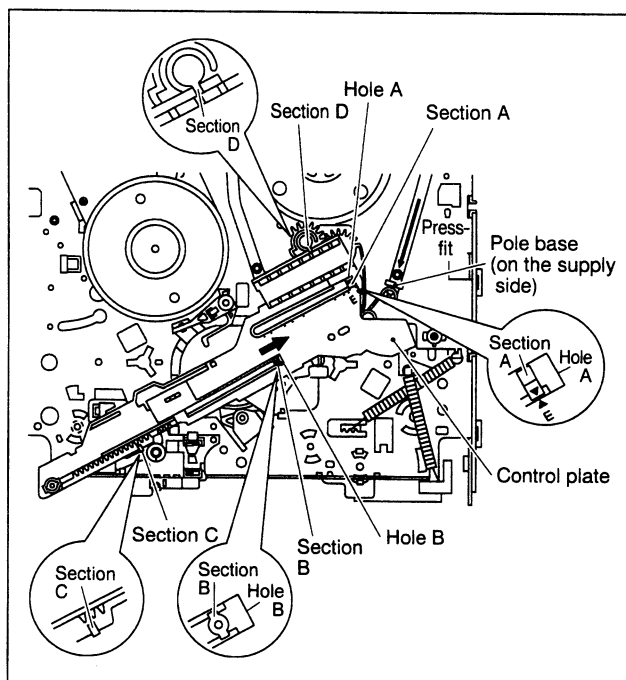


Fig. 2-2-25

2.2.16 Loading Arm (on the supply or take-up side) and Loading Arm Gear Shaft

1. How to remove

- (1) Remove the loading arm (on the supply side) by loosening screw (A) in Fig.2-2-26.
- (2) Remove screw (B) in Fig.2-2-26 and slide the pole base in the loading direction with the spring held on the pole base (on the take-up side). (See Fig.2-2-26)
- (3) Pull the spring out of the pole base. Turn the loading arm clockwise through about 45 degrees so that the notch of the loading arm is in alignment with the projection of the loading arm gear shaft and lift it. Likewise, turn the loading arm counterclockwise through 180 degrees so that the notch is in alignment with the projection and remove the loading arm (on the take-up side). (See Fig.2-2-27)
- (4) When removing the loading arm gear shaft, be sure of first removing the screw retaining the drum assembly (on the back side of the loading arm gear shaft). Then remove one screw (C) and remove the loading arm gear shaft by sliding it in the arrow-indicated direction.

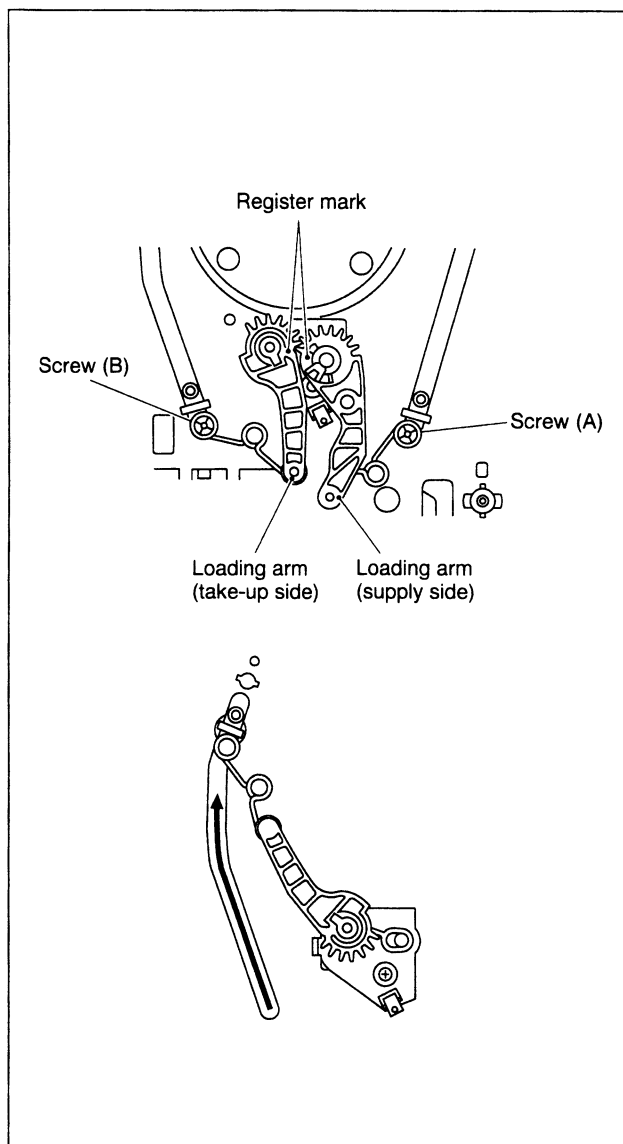


Fig. 2-2-26

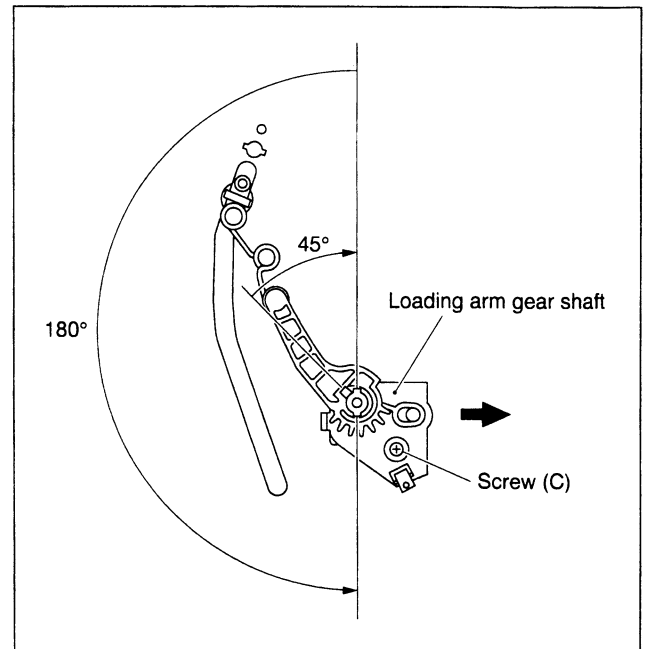


Fig. 2-2-27

2. How to install

- (1) Install the loading arm (on the take-up side) as indicated in Fig.2-2-28 and turn it clockwise through 180 degrees so that the loading arm reaches the bottom of the loading arm gear shaft.
- (2) Then turn the loading arm (on the take-up side) counterclockwise through 180 degrees. Hang the spring on the pole base and tighten the screw.
- (3) Install the loading arm (on the supply side) so that the register mark of the loading arm (on the take-up side) is in alignment with the register mark of the loading arm (on the supply side). Then hang the spring on the pole base and tighten the screw. (See Fig.2-2-26).

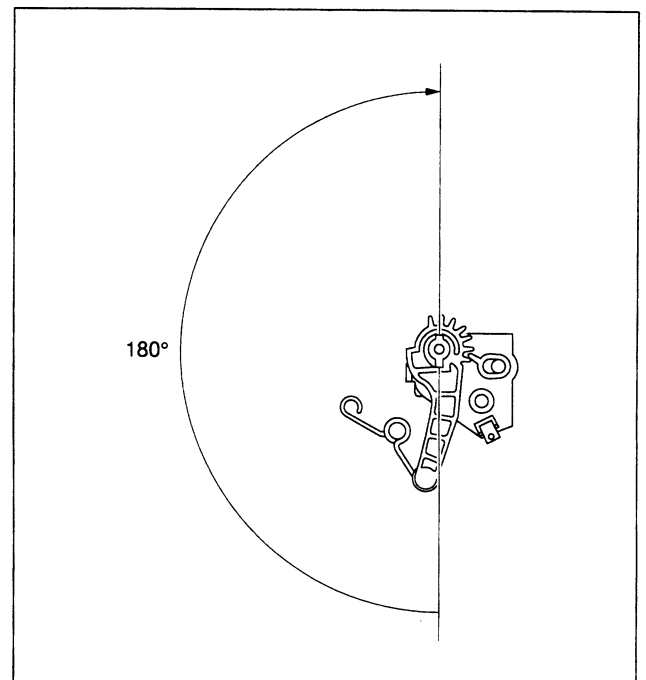


Fig. 2-2-28

2.2.17 Take-up Lever, Take-up Head and Control Plate Guide

- (1) Remove the spring of the take-up lever from the main deck.
- (2) Remove one lug of the take-up lever from the main deck and pull out the take-up lever and the take-up head together.
- (3) Remove one screw (A).
- (4) Remove two lugs of the control plate guide from the main deck. Locate the idler arm pin in the center of the R section of the control plate and remove the latter.

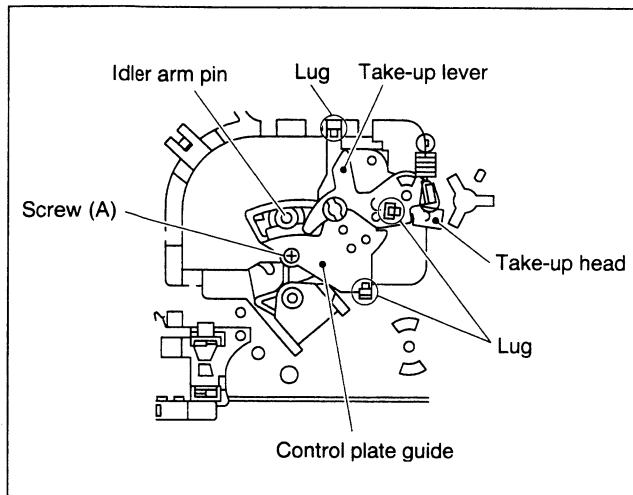


Fig. 2-2-29

2.2.18 Capstan Brake

- (1) Move lug A of the capstan brake in the arrow-indicated direction so that it comes into alignment with the notch of the main deck. (See Fig. 2-2-30)
- (2) Remove lug B of the capstan brake from the main deck and remove the capstan brake.

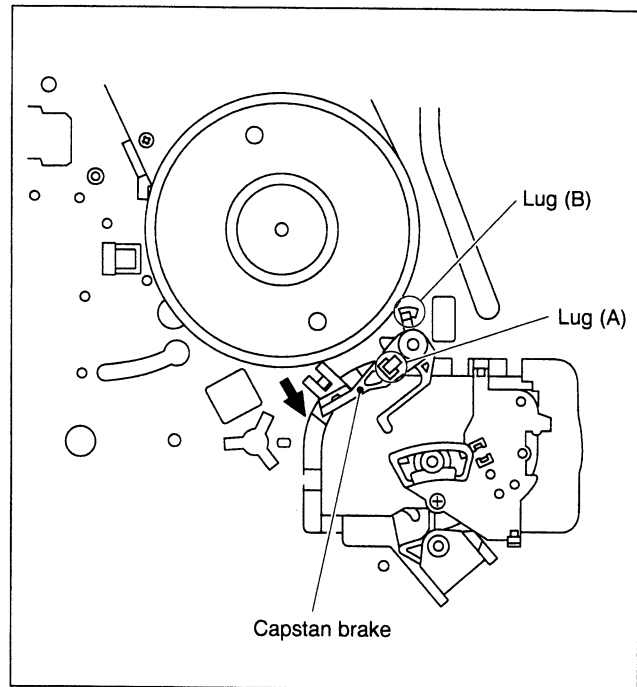


Fig. 2-2-30

2.2.19 Drive Gear and Drive Arm

1. How to remove

- (1) Remove the cassette holder assembly. (See 2.2.3 How to remove the cassette holder assembly)
- (2) Pull out the drive gear and remove the drive arm.

2. How to install

- (1) Insert section A of the drive arm into section B of the main deck.
- (2) Insert section ① of drive gear into hole ○ of the drive arm and section ② into hole □. (See Fig. 2-2-31)

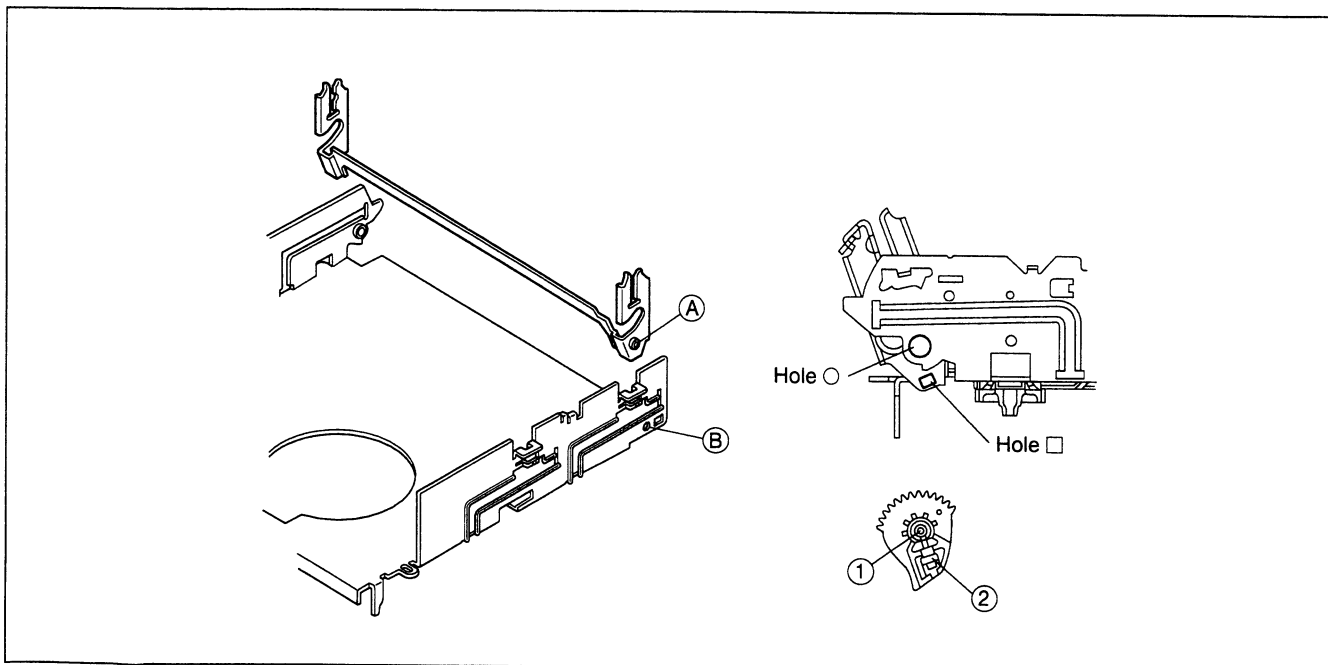


Fig. 2-2-31

2.2.20 Sub Brake (on the take-up side)

- (1) Remove the spring attached to the lid guide and sub brake.
- (2) Bring lug (A) of the sub brake into alignment with the notch of the main deck.
- (3) Remove lugs (B) and (C) of the sub brake from the main deck and remove the sub brake.

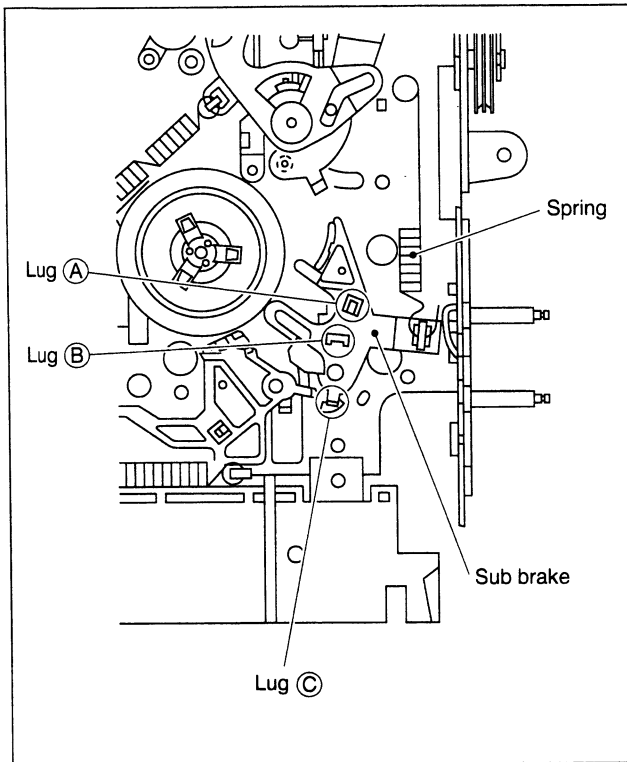


Fig. 2-2-32

2.2.21 Main Brake (on the take-up side), Reel Disk (on the take-up side) and Main Brake (on the supply side)

- (1) Move the main brake (on the take-up side) in the arrow-indicated direction and remove the reel disk (on the take-up side).
- (2) Remove the spring attached to the main brake.
- (3) Remove lug (A) of the main brake (on the take-up side) and pull out lug (B) after bringing it into alignment with the main deck notch.
- (4) Remove lugs (C) and (D) of the main brake (on the supply side) from the main deck and pull them off. (See Fig. 2-2-33)

Note: If the main brake is difficult to remove, press it and hold the adjustment pin from the back side of the main deck when attempting to remove it. After the adjustment pin has been removed or the main brake or the reel disk on the supply or take-up side have been replaced, it is required to adjust the main brake torque. See page 2-24 for the detailed adjustment procedures.

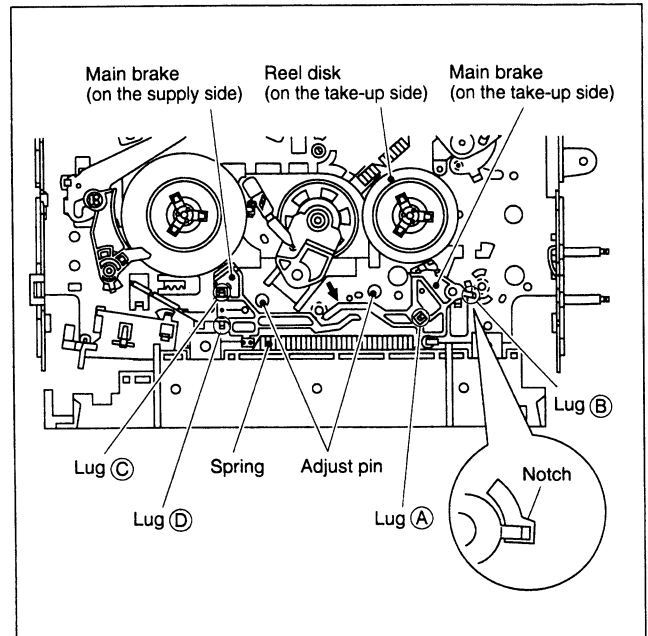


Fig. 2-2-33

2.2.22 Tension Brake, Reel Disk (on the supply side) and Tension Arm

- (1) Remove the three lugs of the tension brake from the main deck and pull them off.
- (2) Remove the reel disk (on the supply side) by loosening in the arrow-indicated direction the main brake (on the supply side).
- (3) Remove the tension spring on the main deck back side and remove the lugs of the tension arm bearing to pull up and remove the tension arm. (See Fig. 2-2-34)

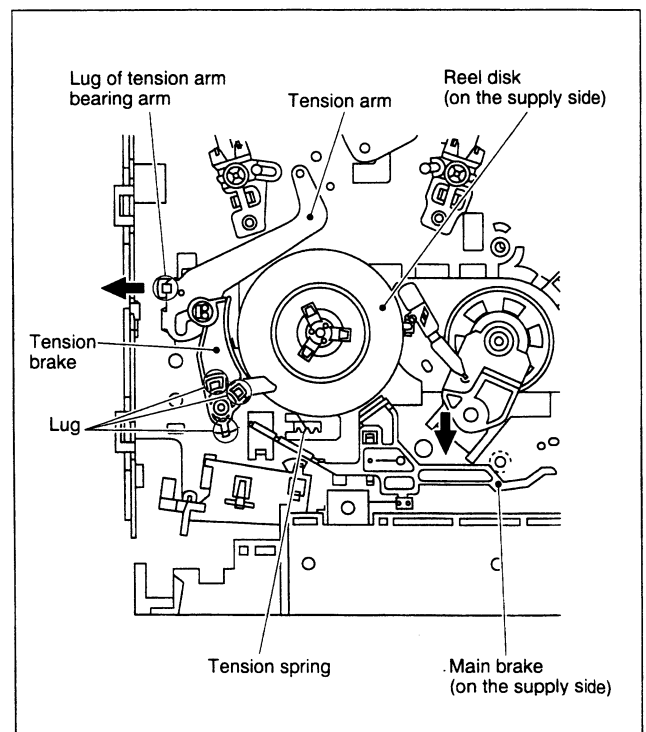


Fig. 2-2-34

2.2.23 Idler Lever, Idler Arm and Reel Shaft

- (1) Remove one lug of the idler lever from the main deck and remove the hook fitted in the idler arm hole by lifting it.
- (2) Remove the slit washer and pull out the idler arm.
- (3) Turn the reel shaft counterclockwise through 60 degrees and remove it. (See Fig.2-2-35)

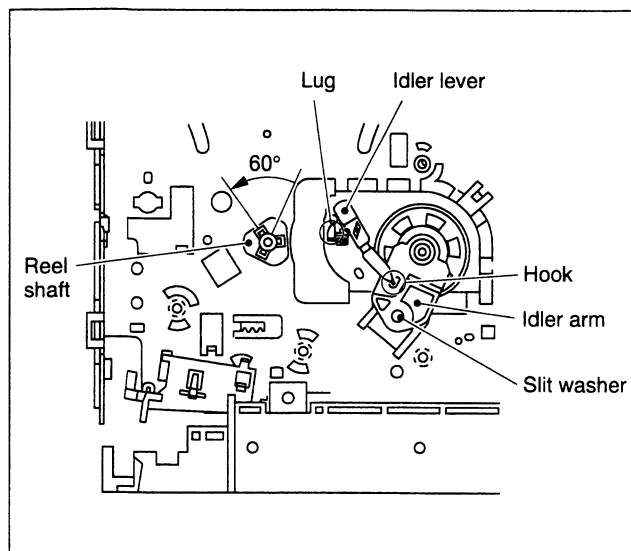


Fig. 2-2-35

2.2.24 Stator Assembly

- (1) Remove two screws (A).
- (2) Remove the stator assembly by lifting in the arrow-indicated direction (Take care that the brush spring does not jump out).
- (3) Remove the flat cable.
- (4) After installation, be sure to perform the 3.2.1 PB switching point adjustment according to the electrical adjustment procedure.

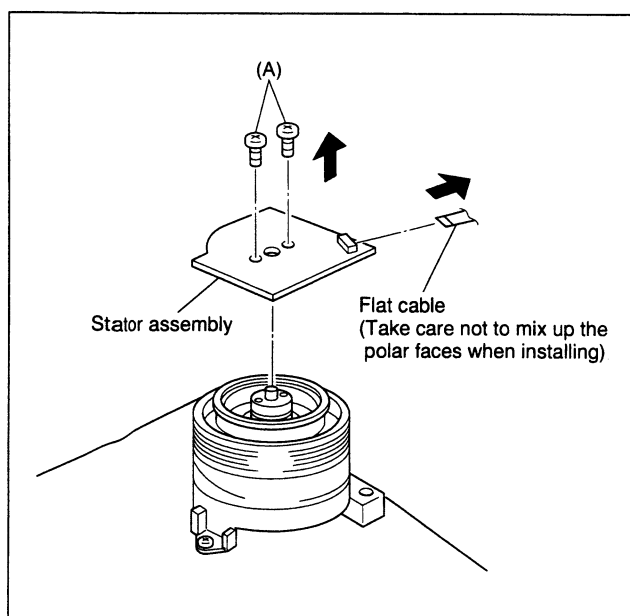


Fig. 2-2-36

2.2.25 Rotor Assembly

- (1) Remove the stator assembly.
- (2) Remove the two screws (B) and remove the rotor assembly.

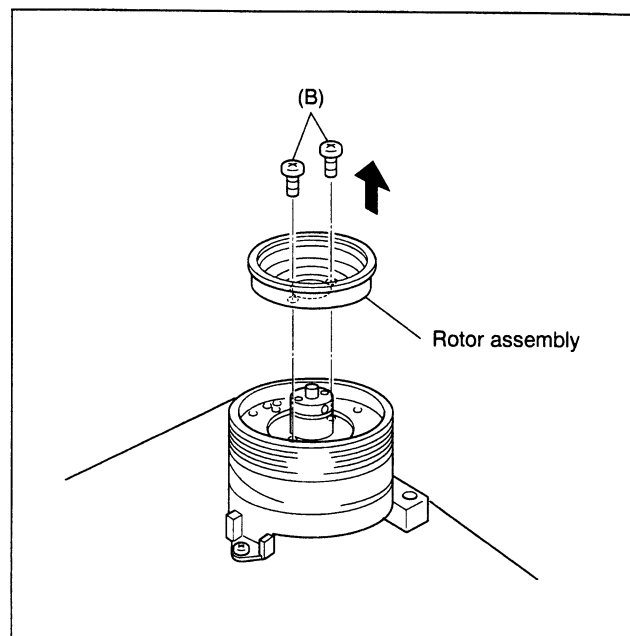


Fig. 2-2-37

Note: When installing the rotor assembly, note that a normal picture cannot be obtained without ensuring the phase matching as mentioned below.

- (3) Match the phases of the upper drum and the rotor assembly as indicated in Fig.2-2-38.
- (4) Place the upper drum hole (a) over the rotor assembly holes (b) (with three holes to be aligned) and tighten the two screws (B). (See Fig.2-2-38)

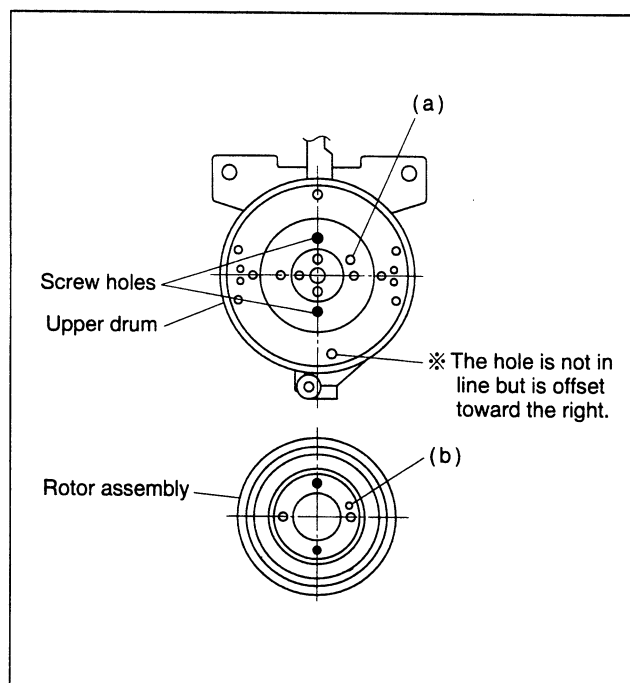


Fig. 2-2-38

2.2.26 Upper Drum Assembly

1. How to remove

- (1) Remove the stator assembly and rotor assembly. (See Fig. 2-2-36 and 2-2-37)
- (2) Loosen the screw of the collar assembly using a 1.5 mm hexagonal wrench and remove the collar assembly. Also remove the brush, spring and cap at one time.
- (3) Remove the upper drum assembly and remove the washer using tweezers.

Note: When replacement is required, control the up-down movement of the brush. Never apply grease.

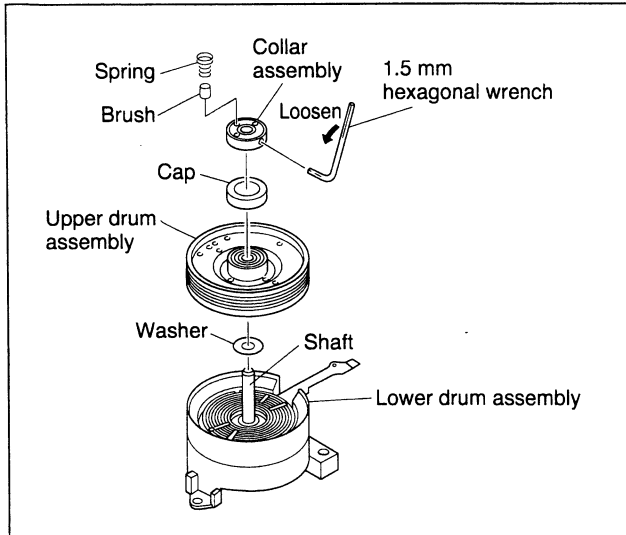


Fig. 2-2-39 Upper drum assembly-1

2. How to install

- (1) Clean coil parts of the lower drum assembly and the newly installed upper drum assembly with an air brush in advance. (See Fig.2-2-40).
- (2) Install a new washer and upper drum assembly on the drum shaft. (See Fig.2-2-39)

Note: When replacing the upper drum assembly, replace it together with the washer.

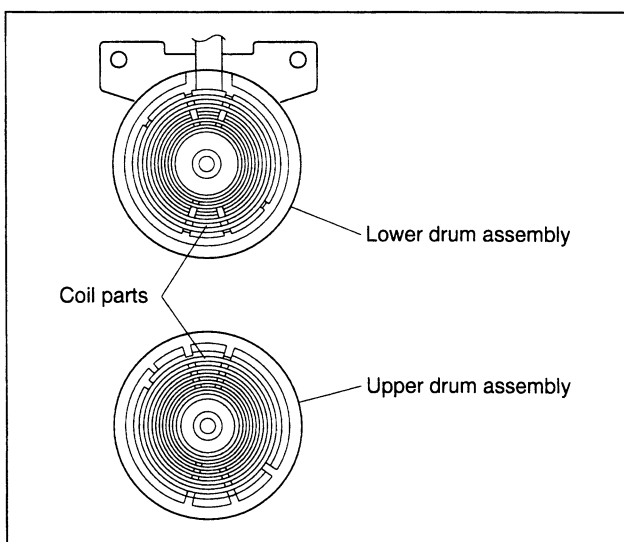


Fig. 2-2-40

- (3) Position the collar assembly as indicated in Fig.2-41 while controlling its up-down movement.

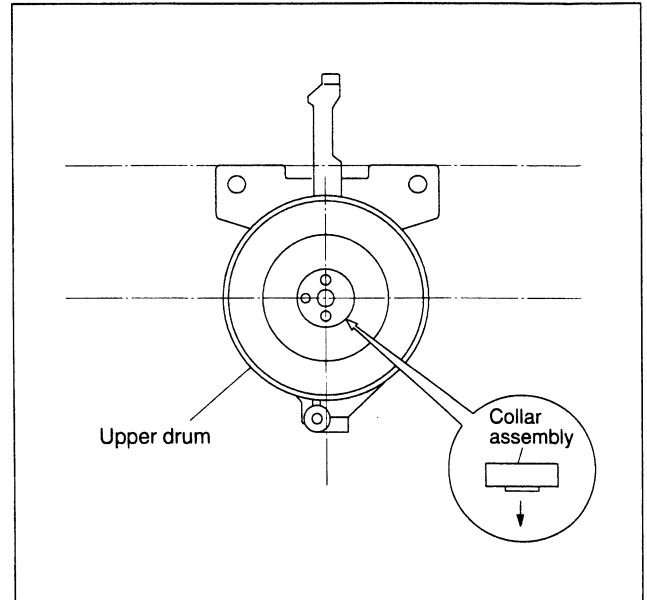


Fig. 2-2-41

- (4) Secure the collar assembly in position with a hexagonal wrench while pressing its top with the fingers.

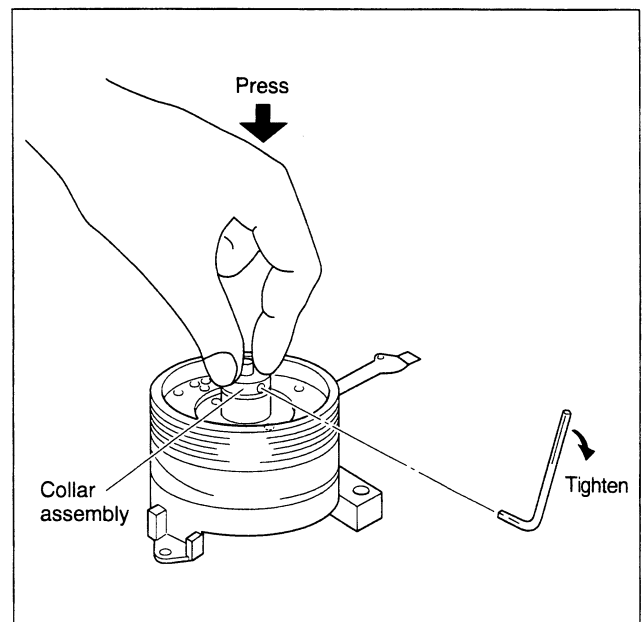


Fig. 2-2-42

- (5) After installation, gently turn the upper drum with your hand to make sure that it turns normally.
- (6) Install the rotor assembly and stator assembly according to Fig. 2-2-36 and 2-2-38.
- (7) When installation is complete, clean the upper drum assembly and lower the drum assembly and carry out the following adjustments.
 - PB switching point adjustment
 - Slow tracking adjustment
 - Compatibility adjustment (Be sure to check for compatibility for the EP mode.)

2.3 MAJOR PARTS INSTALLATION (PHASE MATCHING BETWEEN MECHANICAL PARTS)

2.3.1 Before Assembly of the Parts

The mechanism of this unit is closely linked with the rotary encoder and system controller circuits.

Since the system controller detects the status of mechanical operation in response to phases of the rotary encoder (internal switch positions), the mechanism may not operate properly unless such parts as the rotary encoder, control plate, loading arm assembly, control cam, cassette gear, limit gear, relay gear and drive gear are installed in their correct positions.

Especially, this model is not provided with any cassette housing assembly, so that cassette loading and unloading must be accomplished by operation of the cassette holder assembly. The latter is in turn driven by such parts as drive gear, relay gear and limit gear. Exercise enough care, therefore, to have the phases of all this gear matching one another.

Perform the installation of major parts (including phase matching) in the mechanism assembling mode as in the previous section.

2.3.2 Loading Arm Assembly (on the Supply or Take-up Side)

- (1) Return the pole base assembly to the foremost position in the unloading direction.
- (2) Install the loading arm assembly so that the register mark on the gear of the supply side loading arm is in alignment with the one on the take-up side loading arm as indicated in Fig. 2-3-1.

See 2.2.16 "2. How to install" of the foregoing section for details of installation.

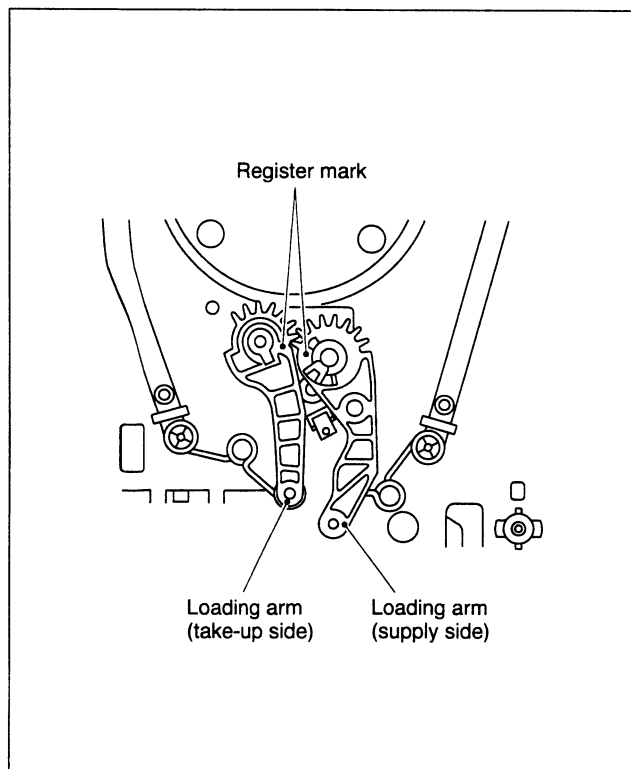


Fig. 2-3-1

2.3.3 Control Plate

- (1) With register marks on the both loading arm assemblies in alignment, install the control plate so that the mark ▼ on the loading arm gear shaft is in alignment with mark E of the control plate. (See Fig.2-3-2)

See 2.2.15 "2. How to install" of the foregoing section for details of installation.

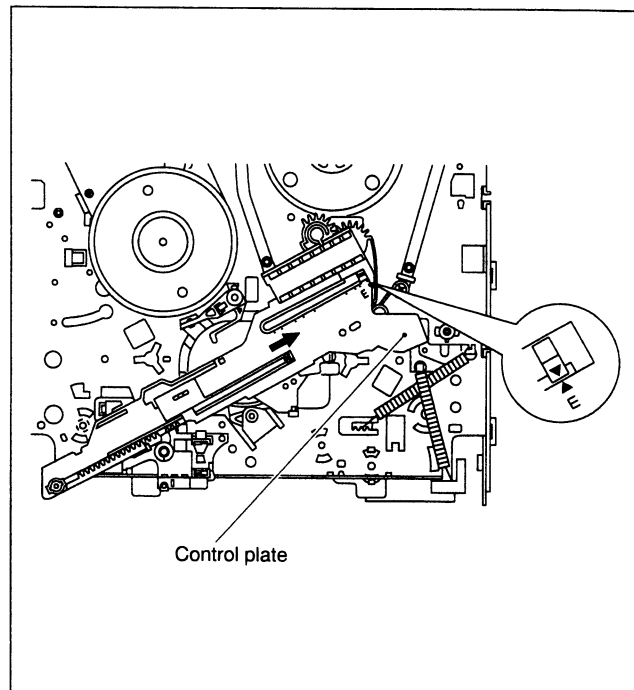


Fig. 2-3-2

2.3.4 Rotary Encoder

- (1) Make sure that the mark E of the control plate is in alignment with the mark ▼ of the loading arm gear shaft and bring the register marks on the rotary encoder into alignment as indicated in Fig.2-3-3.
- (2) Turn over the rotary encoder with its register marks kept in alignment and install it by fitting on the shaft of the rotary encoder guide and the positioning pin.
- (3) Tighten the screw (A) to complete the installation.

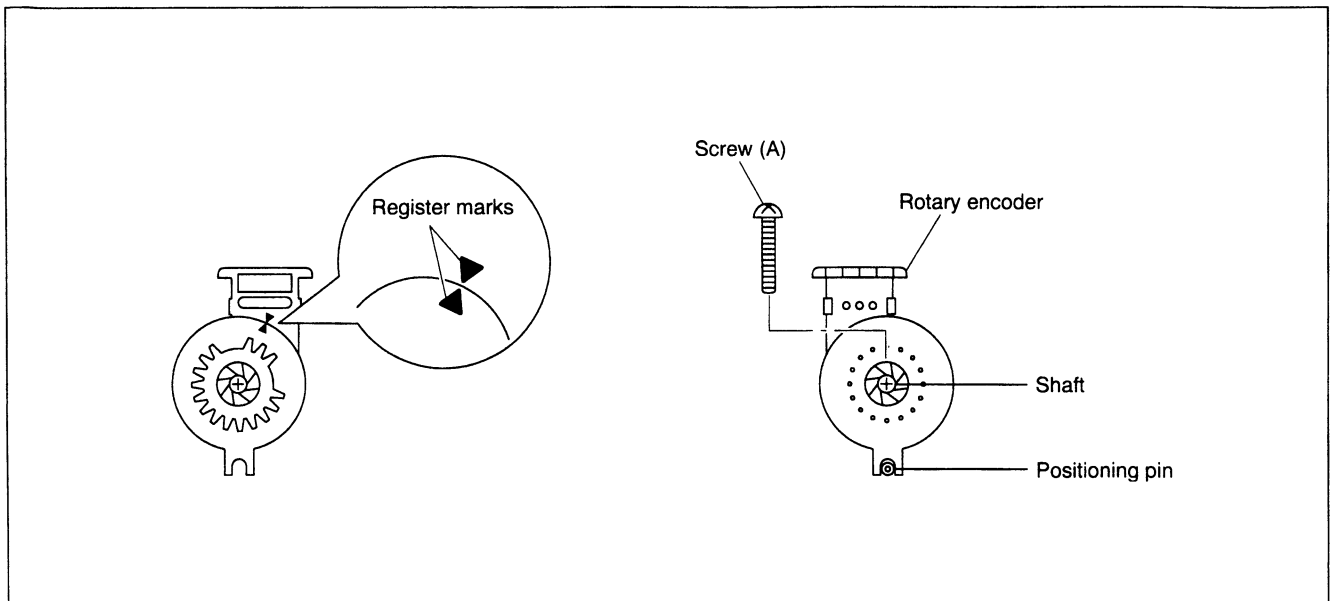


Fig. 2-3-3

2.3.5 Control Cam, Cassette Gear and Link Lever

- (1) Install the control cam as indicated in Fig.2-3-4 making sure of the front and back side alignment.
Note here that the register hole of the control cam is in alignment with and allows passage through the register hole of the main deck. Perform fine-adjustment by turning the worm gear.
- (2) Install the cassette gear by pushing it until it is locked with a clicking sound. (See Fig.2-3-4)
- (3) Insert section (A) of the link lever into section (B) of the control plate as shown in Fig.2-3-5.

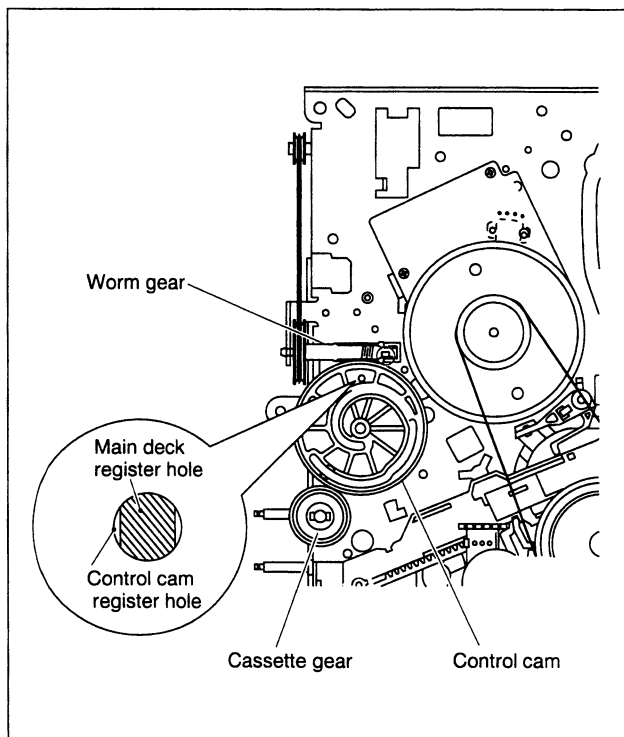


Fig. 2-3-4

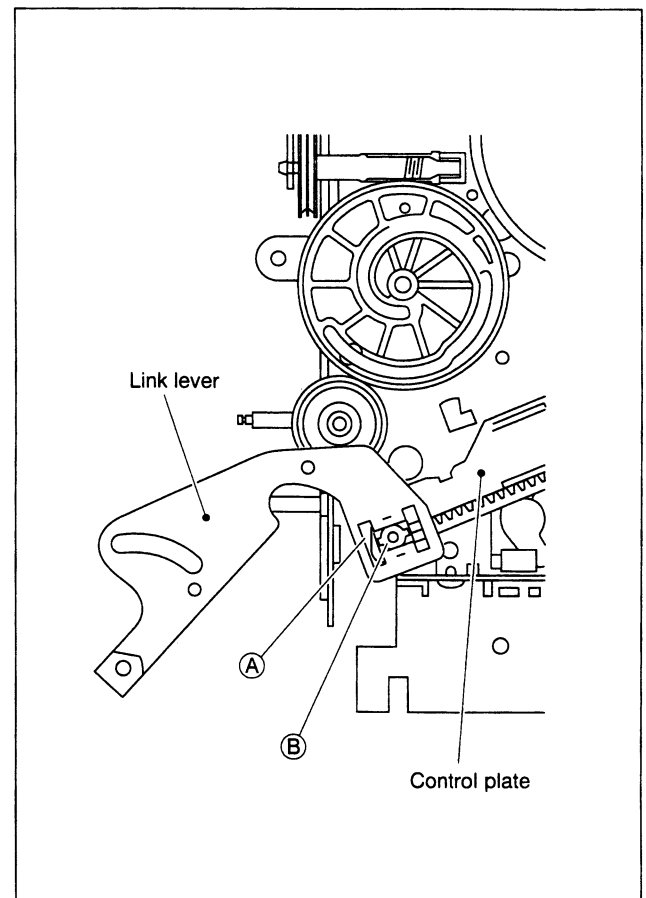


Fig. 2-3-5

- (4) Turn the link lever clockwise and mount it on the control cam center shaft (A) and the control cam left-side shaft (B). (See Fig.2-3-6).
- (5) Fasten the slit washers at two points (A) and (B).

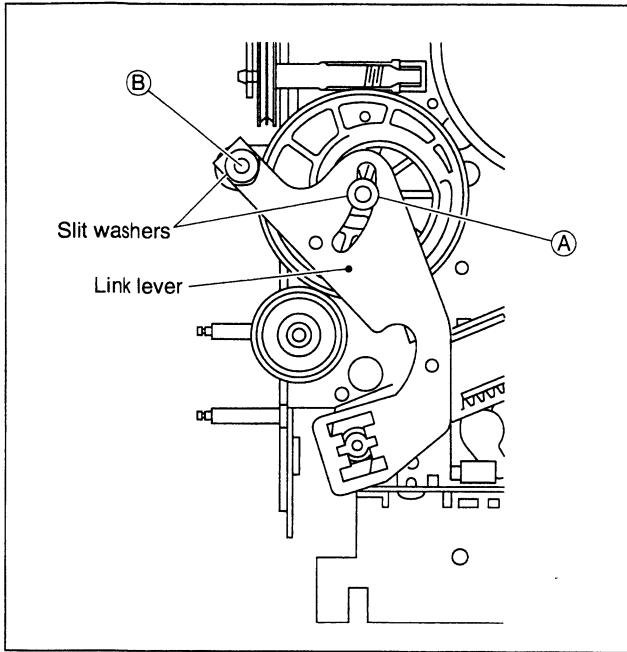


Fig. 2-3-6

2.3.6 Relay Gear, Limit Gear and Drive Gear

- (1) Install the limit gear so that the notch at its outer circumference is in alignment with the register hole of the main deck. (See Fig.2-3-7)
- (2) Install so that the notch at the outer circumference of the relay gear is in alignment with the notch of the main deck, and at the same time, that the hole A of the relay gear is in alignment with hole A of the limit gear and hole B of the relay gear with hole B of the drive gear. (See Fig.2-3-7)

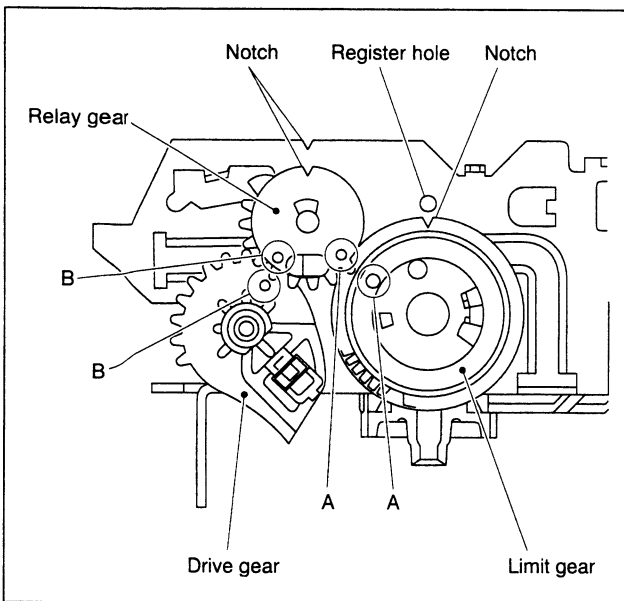


Fig. 2-3-7

2.4 COMPATIBILITY ADJUSTMENT

- Notes:**
- Although compatibility adjustment is very important, it is not necessary to perform this as part of the normal servicing work. It will be required when you have replaced the audio control head, drum assembly or any part of the tape transport system.
 - To avoid any damage to the alignment tape while performing the compatibility adjustment, get a separate cassette tape (for recording and play back) ready to be used for checking the initial tape running behavior.

2.4.1 Checking/Adjustment of FM Waveform Linearity

- (1) Connect the oscilloscope to TP106(PB FM/COL) of the main board assembly and to TP111(D.FF) of the main board assembly for external sync connection.
- (2) Playing the alignment tape MHPE, observe the FM waveform.
- (3) Press the channel buttons (+) and (-) buttons simultaneously during playback to enter the manual tracking mode (This also brings tracking to the center.)
- (4) Make sure that there is no significant level drop of the FM waveform caused by the tracking operation, with its generally parallel and linear variation ensured. Perform the following adjustments when required. (Fig.2-4-1)
- (5) Slightly loosen the set screw under the pole base assembly with a 1.25 mm hexagonal wrench (Take care not to loosen too much). (Fig.2-4-2)
- (6) Reduce the FM waveform while pressing the channel buttons (+, -) during playback. If a drop in level is found on the left side as shown in Fig.2-4-3, turn the guide roller of the pole base assembly (supply side) with the roller driver (PTU94002) to make the FM waveform linear. If a drop in level is on the right side, likewise turn the guide roller of the pole base assembly (take-up side) with the guide roller to make it linear. (Fig.2-4-3)
- (7) Then play MHPE-L and make sure that the FM waveform varies in parallel and linearly with the tracking operation. When required, perform fine-adjustment of the guide roller of the pole base assembly (supply or take-up side).
- (8) After adjustment, tighten the set screw under the pole base assembly. (Take care not to tighten too much)
- (9) After tightening the set screw, play the alignment tape MHPE and MHPE-L again to make sure that the FM waveform has correct variation.

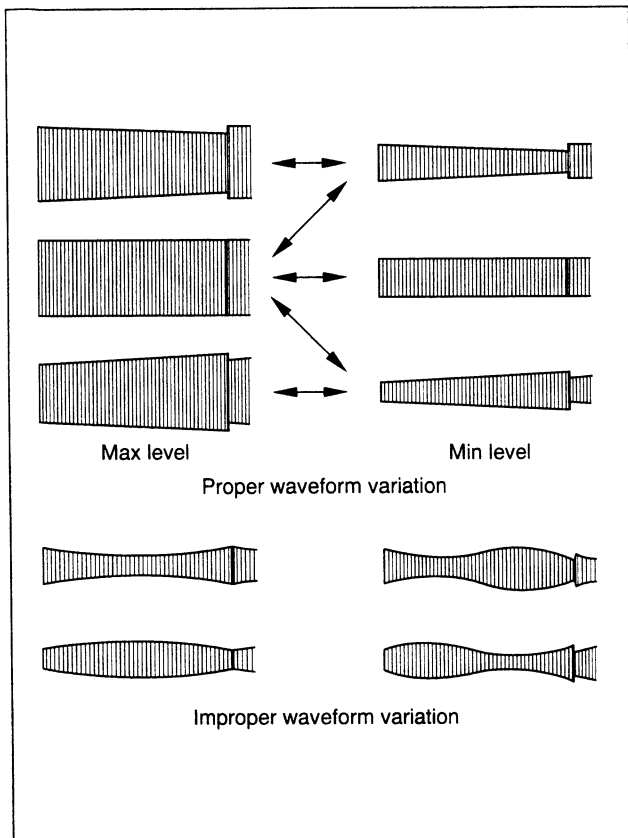


Fig. 2-4-1

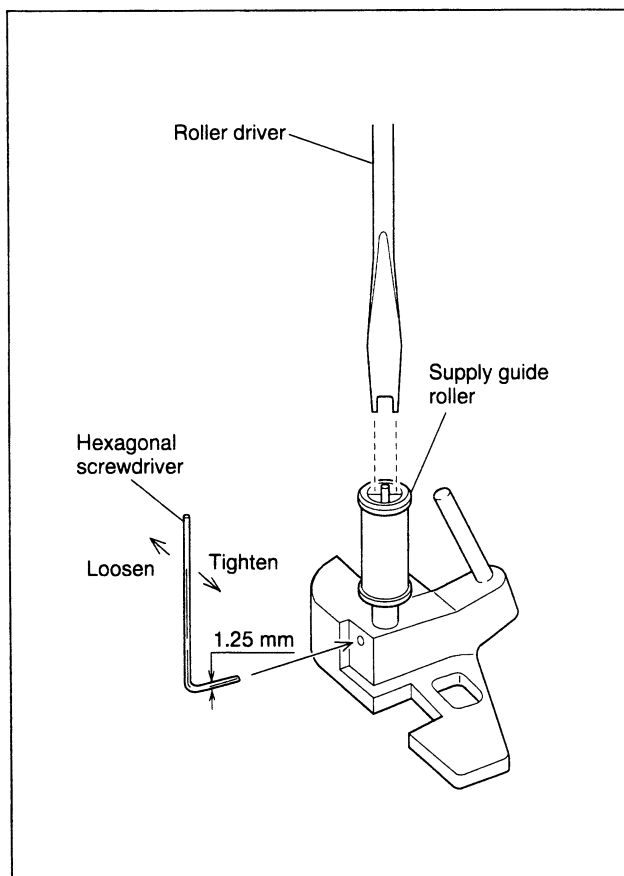


Fig. 2-4-2

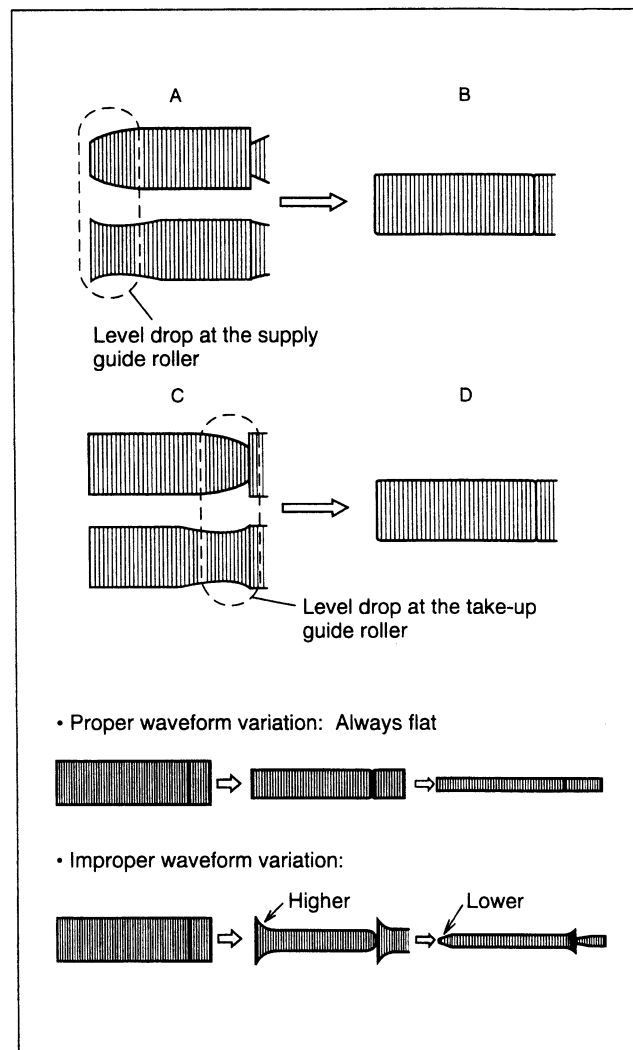


Fig. 2-4-3

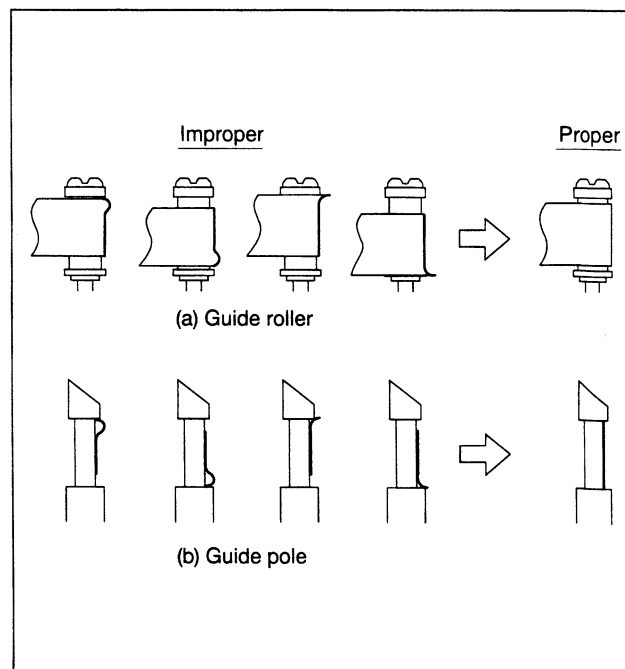


Fig. 2-4-4

2.4.2 Checking/Adjustment of the Height and Tilt of the Audio Control Head

Note: Set a temporary level of the height of the A/C head in advance to make the adjustment easier. (See Fig.2-2-14)

- (1) Connect CH-1 of the oscilloscope to AUDIO OUT and CH-2 to TP4001 (CTL P) of the main board and observe the waveforms on both channels in the ALT mode.
- (2) Play the alignment tape MHPE and adjust it by turning screws (1), (2) and (3) little by little until the waveform of both the audio output signal and the control pulse reach maximum. Screw (1) and screw (3) are for adjustment of tilt and screw (2) for azimuth.

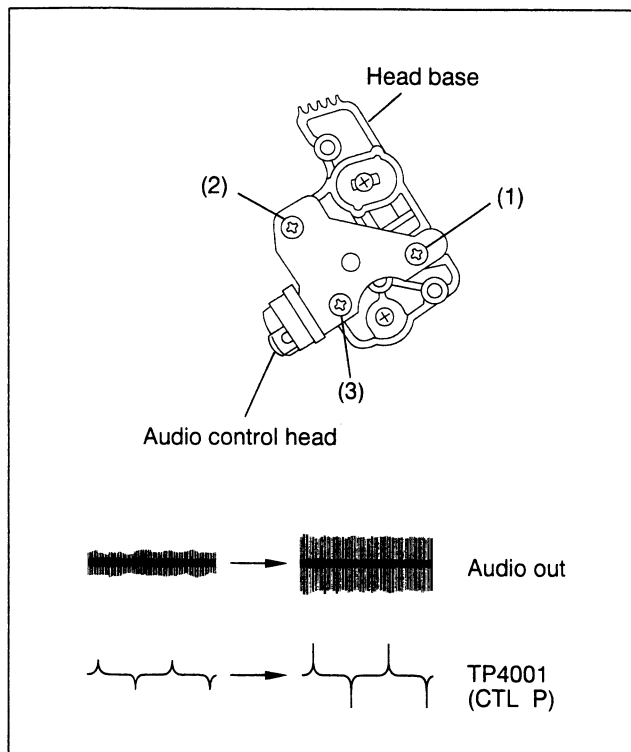


Fig. 2-4-5

2.4.3 Checking/Adjustment of the Audio Control Head Phase (X-Value)

- (1) Connect the oscilloscope to TP106(PB FM/COL) of the main board assembly and to TP111(D.FF) of the main board assembly for external sync connection.
- (2) Play the alignment tape MHPE and observe the FM waveforms.
- (3) Press the channel buttons (+) and (-) buttons simultaneously during playback to enter the manual tracking mode (This also brings tracking to the center.)
- (4) Loosen screws (4) and (5) so that the A/C head position bit (PTU94010) is set as indicated in Fig.2-4-6.
- (5) Turn the A/C head position and first move the audio control head fully up to the capstan head. Then gradually return the audio control head toward the drum and stop it where the FM waveform reaches its maximum for the first time. Then tighten screw (4) temporarily.

- (6) Then play the alignment tape MHPE-L.
- (7) Press the channel buttons (+) and (-) buttons simultaneously during playback to enter the manual tracking mode (This also brings the tracking to the center.)
- (8) Perform the tracking operation and make sure that the FM waveform is at its maximum.
- (9) If it is not at maximum, loosen the temporarily tightened screw (4) and turn the A/C head position bit to bring the audio control head to a position, around where the waveform reaches its maximum for the first time. Then tighten screws (4) and (5).

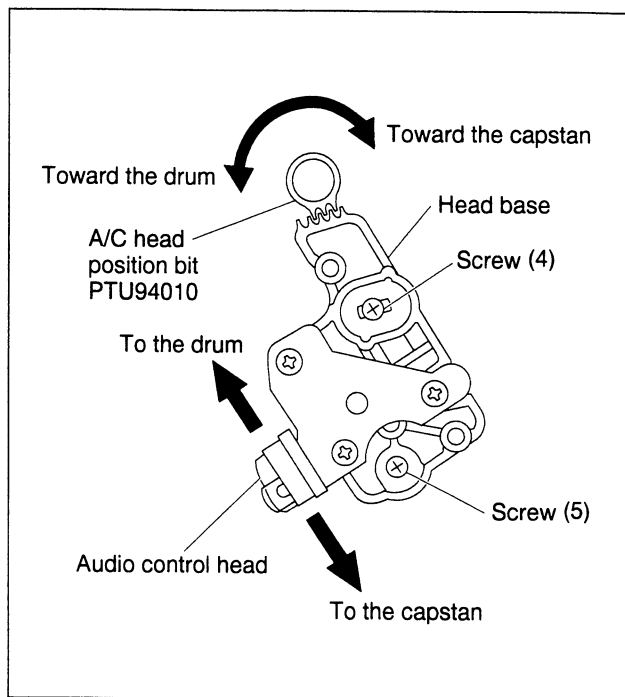


Fig. 2-4-6

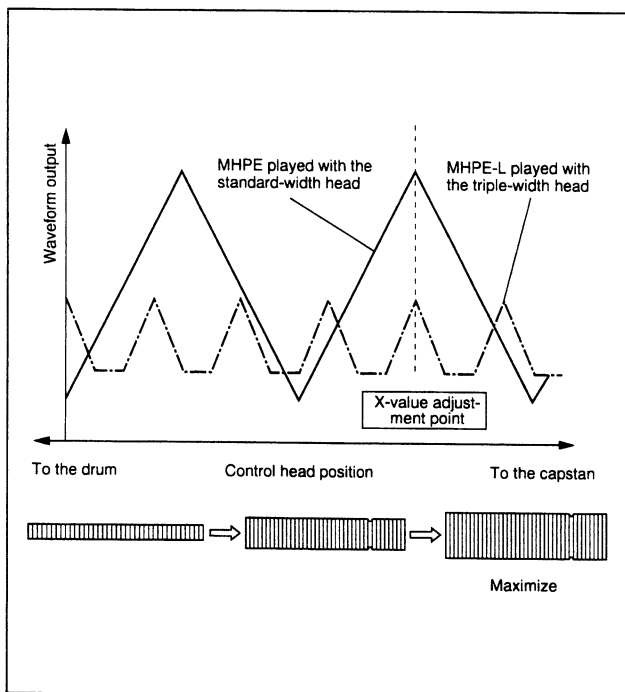


Fig. 2-4-7

2.4.4 LP mode Tracking preset

Note: Set the remote control cable of the video recorder to A mode.

(The unit set in B mode does not accept the remote control cable of the presetting unit.)

- (1) Connect the oscilloscope to TP106(PB FM/COL) of the main board assembly and to TP111(D.FF) of the main board assembly for external sync connection.
- (2) Playing the alignment tape MHPE and observing the FM waveform, make sure that the auto tracking operation is complete.
- (3) Press the button "D" of the presetting unit twice.
- (4) Make sure that the MHPE-L is not ejected.
- (5) If ejected, again perform the phase (X-value) adjustment of the audio control head.

2.4.5 Checking/Adjustment of the Tension Pole

- (1) Check the back tension cassette gauge (PUJ48076-2) to make sure that the indicator points to 29 - 46 g-cm.
- (2) If the indicated value is outside this range, carry out the following adjustment steps.
 - 1) Select the mechanism servicing mode. (See 1.5 MECHANISM SERVICE MODE)
 - 2) While in the Play mode, turn the adjustment pin with a straight-slot screwdriver while taking care not to touch the 2.5 mm dia. pole. (See Fig.2-4-8).

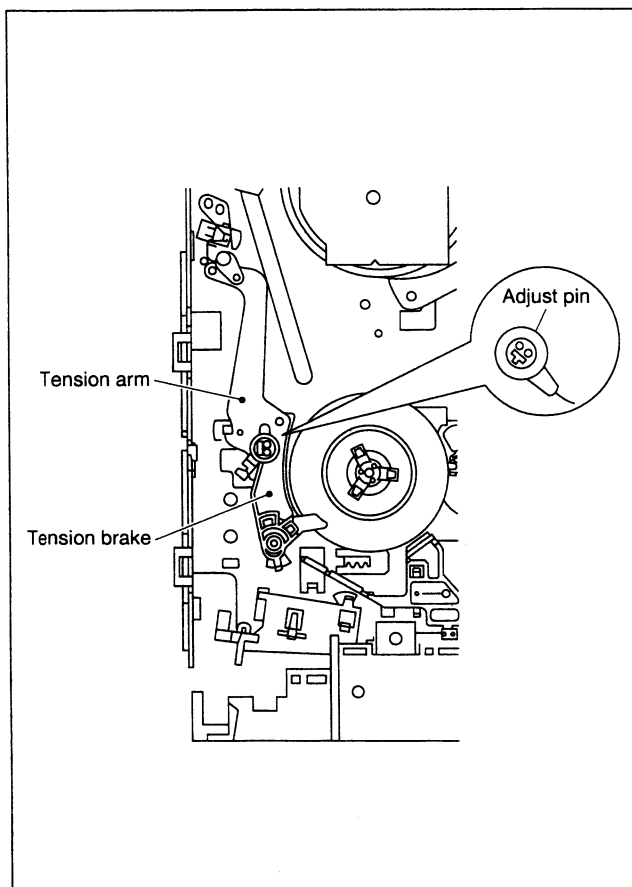


Fig. 2-4-8

2.4.6 Adjustment of the Tension Stud

- (1) Adjust so that the left side of the tension stud is on the extension of the notch line of the main deck as indicated in Fig.2-4-9.

Note: Adjustment is not usually necessary for the tension stud. Perform this adjustment only when it is out of position.

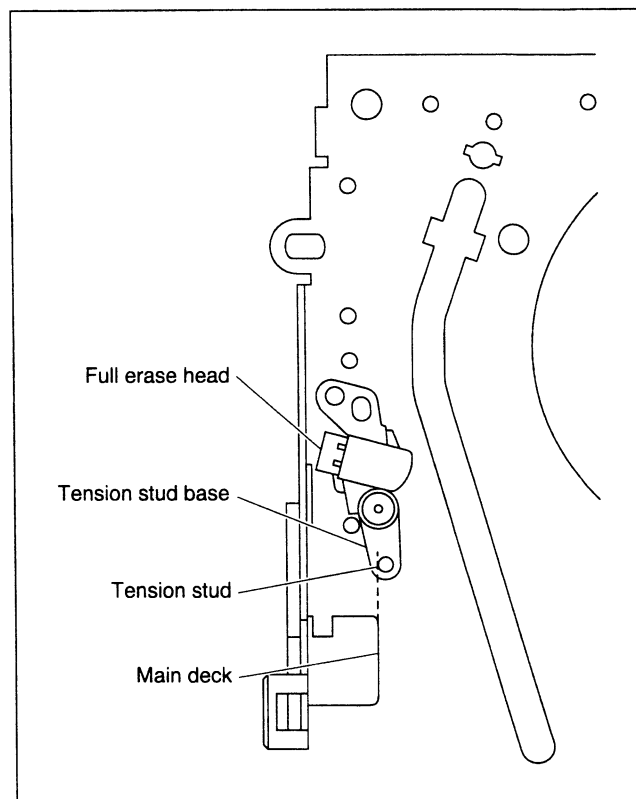


Fig. 2-4-9

2.4.7 Main Brake Torque Adjustment

Note: Adjustment of the main brake torque is required after the adjustment pin has been removed or the main brake or the reel base on the supply or take-up side have been replaced, removed or attached.

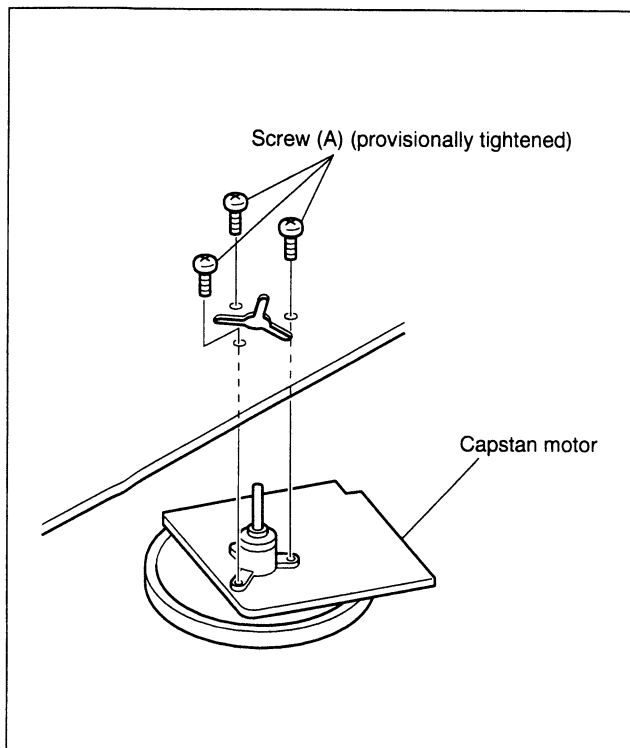
- (1) Rotate the pulley of the loading motor by hand to align the mark ▼ on the loading arm gear shaft with the ST marking on the control plate (i.e. set to the STOP mode position).
- (2) Insert a torque gauge (PUJ48075-2) into the reel base on the side to be played, hold the torque gauge lightly, rotate it clockwise when measuring the supply side torque or counterclockwise when measuring the take-up side torque, and read the value indicated at the moment the reel base starts to slip.
- (3) Make sure that the main brake torque values on the supply and take-up sides are both between $39.2 \sim 78.4 \times 10^{-3}$ N-m (400 — 800 gf-cm). If the value is outside the specified range, adjust to the specified value by rotating the adjustment pin.
If an adjustment by using the adjustment pin is not possible, replace the main brake.

How to Mount the Capstan Motor (Centering the Mounting Position)

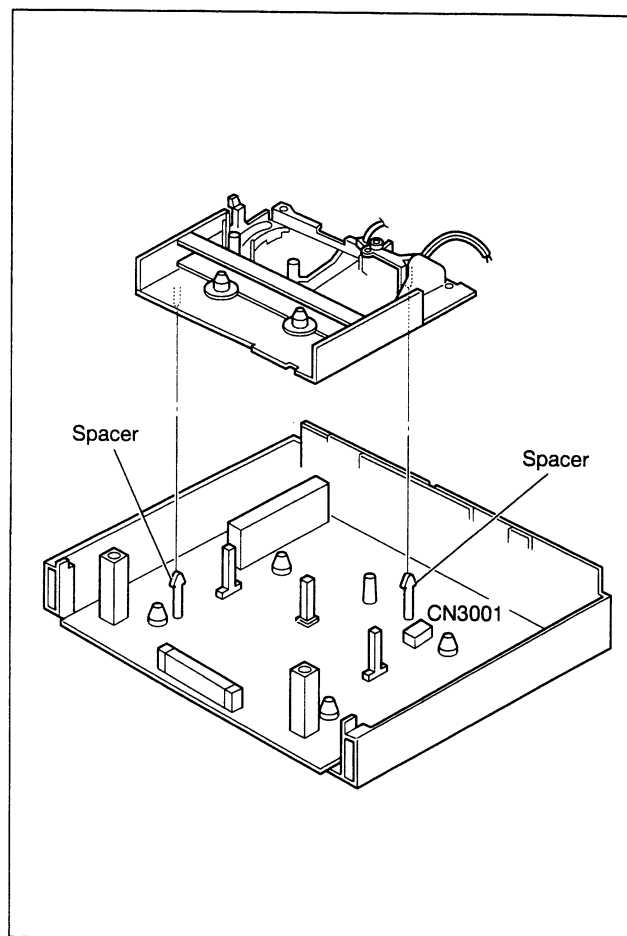
When the capstan motor has once been removed and then reinstalled out of the initial correct position in the rotational direction, the capstan motor current may be unstable during operation in high or low temperatures. This may result in greater Wow & Flutter and occasionally in power break-down because of current over - load. Install the capstan motor while following the procedure given below.

(The capstan motor is centrally located when the unit is shipped from the factory.)

1. Provisionally tighten the three screws (A) securing the capstan motor.



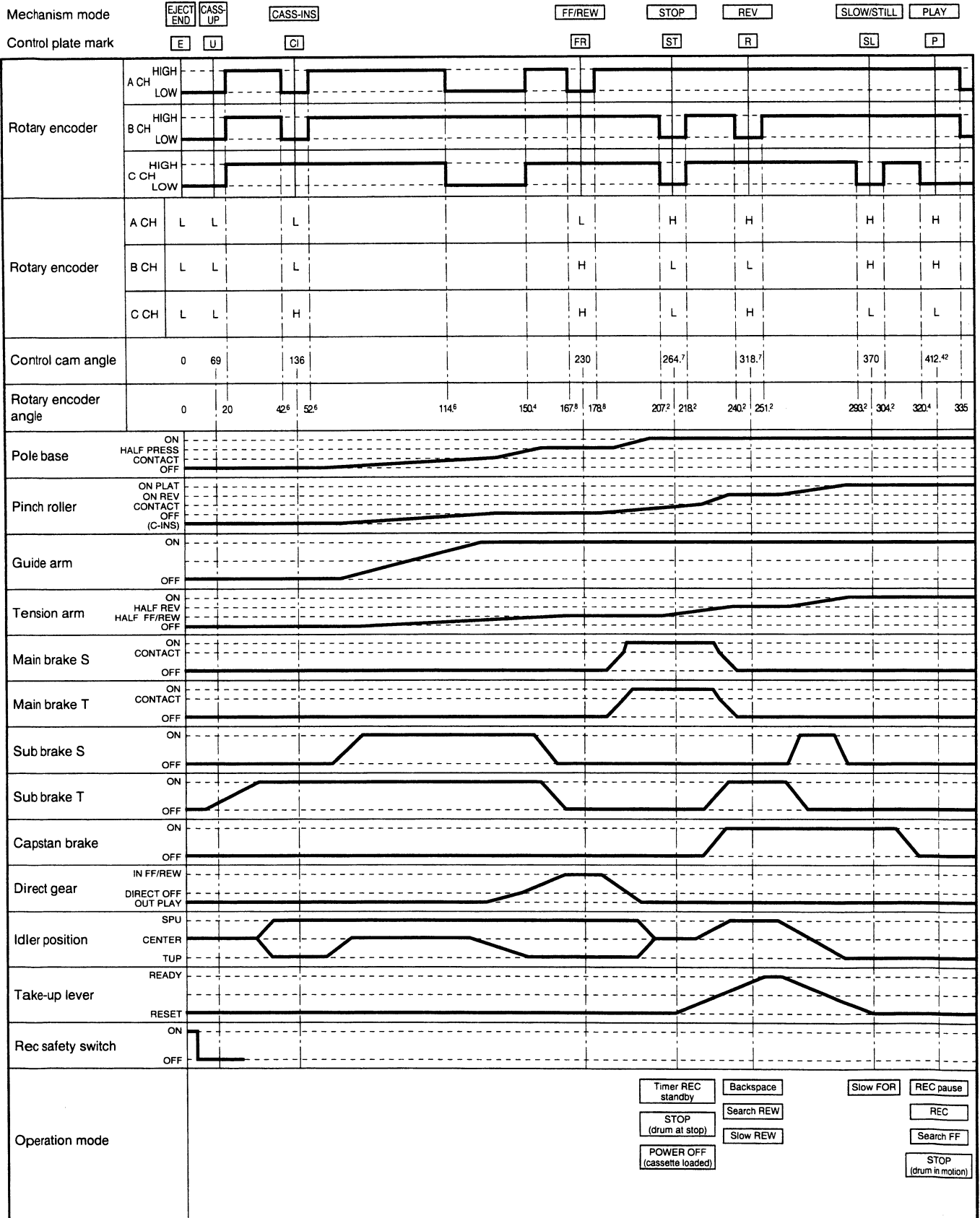
2. Install the mechanism to which the capstan motor is provisionally fastened on the bottom chassis which incorporates the Main board assembly. (No need to tighten the screws for mounting the mechanism)
Make sure that all the connectors for the mechanism and the Main board are correctly installed.



3. Securely tighten the three screws (A), especially making sure that the connector CN3001 of the capstan motor is correctly mounted.

Note: When the capstan motor has been replaced with a new one, perform recording in the LP mode for at least 2 minutes at normal temperatures immediately before starting the FF/REW or SEARCH operations (Aging).

Mechanism Timing Chart



SECTION 3 ELECTRICAL ADJUSTMENT

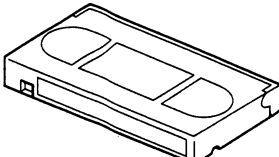
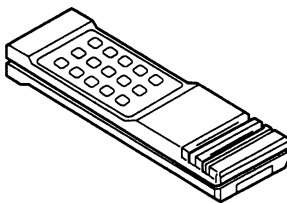
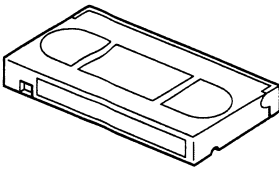
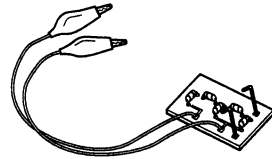
3.1 PRECAUTION

Electrical adjustment are required after replacing circuit components and certain mechanical parts. It is important to perform these adjustments only after all repairs and replacements have been completed. Also do not attempt these adjustments unless the proper equipments is available.

3.1.1 Required test equipment

- ① Colour television or monitor
- ② Oscilloscope: wide-band,dual-trace,triggered delayed sweep
- ③ Frequency counter
- ④ Digital voltmeter
- ⑤ Signal generator: RF/IF sweep/maker
- ⑥ Signal generator: PAL colour bar, staircase
- ⑦ Recording tape
- ⑧ Numeric-key remote controller(provided)

3.1.2 Required adjustment tools

Alignment tape (SP, staircase) MHPE	Presetting unit PTU94008
	
Alignment tape (S-VHS, SP/LP, colour bar) MH-2H	LPF PTU93006
	

3.1.3 Colour bar signal,colour bar pattern

● PAL colour bar signal

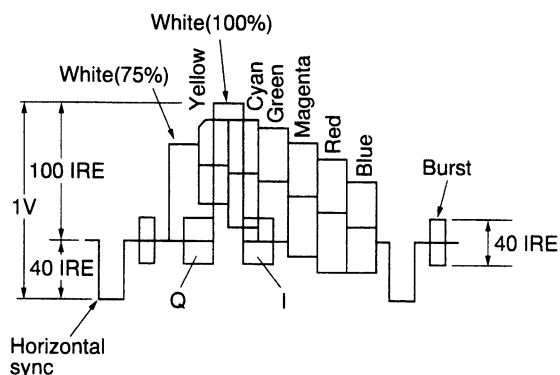


Fig.3-1-1 PAL colour bar signal waveform

● PAL colour bar pattern

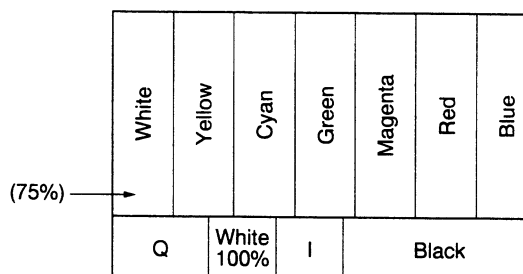


Fig.3-1-2 PAL colour bar pattern

Note:

The system control circuit of this model has an automatic recognition about the ON-OFF control of the **DOCTOR SYSTEM**.

3.2 SERVO CIRCUIT

- Notes:**
- Unless otherwise specified, all measurement point and adjustment parts are located on the MAIN BOARD.
 - Set VCR to the mode A by remote controller.
 - Use only buttons "O", depressing other buttons during adjustment may cause adjustment errors.

3.2.1 PB switching point

Signal	• Alignment tape [MHPE], Stairstep
Mode	• PB
Equipment	• Oscilloscope
Measurement point	• VIDEO OUT TERMINAL
Trigger slope (-)	• TP111 (DRUM FF)
Adjustment tool	• Presetting unit [PTU94008]
Specification	• $7.5 \pm 0.5H$

- (1) Playback the stairstep signal of the alignment tape.
- (2) Connect an oscilloscope to VIDEO OUT TERMINAL and TP111 (negative slope), and then observe VIDEO OUT TERMINAL.
- (3) Press the "O" button of the presetting unit.
- (4) The adjustment is performed automatically.
Once the adjustment is performed, the VCR will go into the STOP mode.
- (5) Playback the alignment tape again, confirm the switching point (See Fig. 3-2-2).

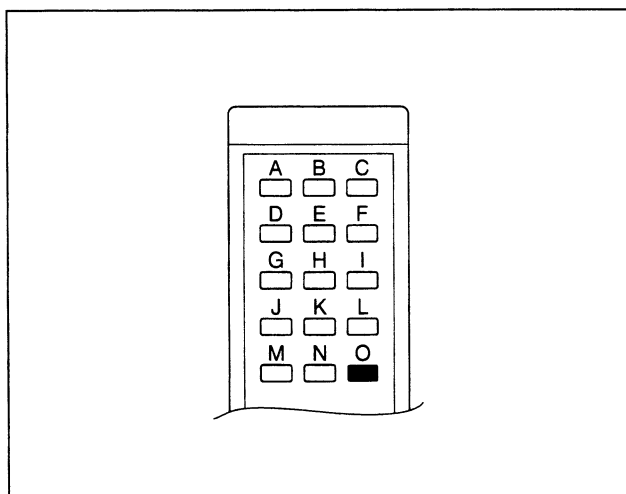


Fig. 3-2-1 Presetting unit

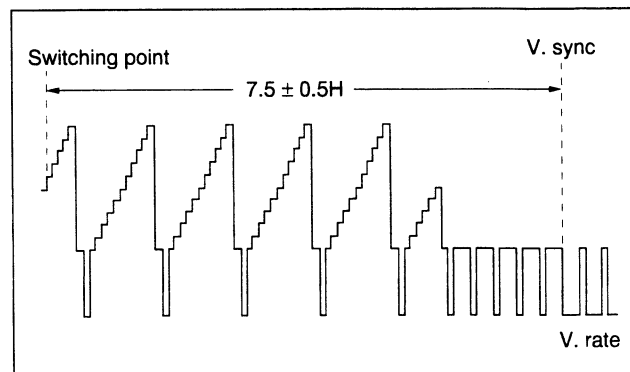


Fig. 3-2-2 PB switching point

3.2.2 Slow tracking preset

Signal	• Tuner or colour bar
Mode	• SP/LP : REC → PB(SLOW) • S-VHS
Equipment	• TV-Monitor
Adjustment tool	• Presetting unit (PTU94008)
Specification	• Minimum noise

- Notes:**
- Set VCR to the mode A by remote controller.
 - Use only buttons "B" and "C", depressing other buttons during adjustment may cause adjustment errors.

- (1) Record a colour bar signal in the SP mode.
- (2) Playback recorded signal on the FWD slow mode.
- (3) Observe the display on the TV monitor and adjust for optimum noise condition (best tracking) by depressing "B" or "C" buttons of the presetting unit.
- (4) Depress the STOP button.
- (5) Confirm that the bar noise is not visible on the TV monitor in the slow mode.
- (6) Repeat steps (2) to (6) in the REV slow mode.
- (7) Repeat steps (2) to (6) in the LP mode.

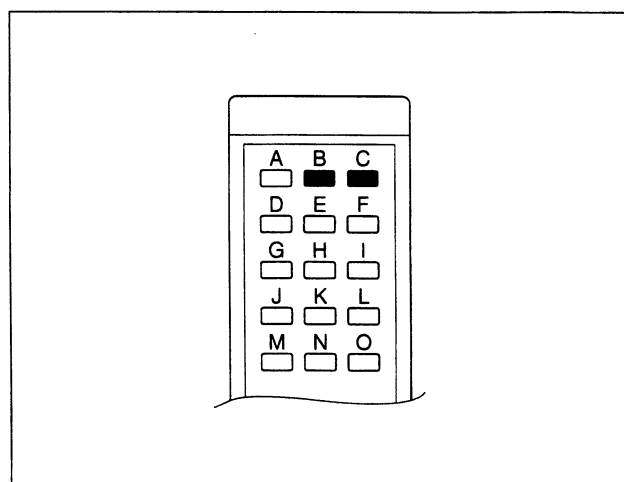


Fig. 3-2-3 Presetting unit

3.3 VIDEO CIRCUIT

- Notes:**
- Unless otherwise specified, all measurement point and adjustment parts are located on the MAIN BOARD.
 - VIDEO circuit adjustments are performed by the EVR system by use of the presetting unit and digit-key remote controller.
 - S-INPUT means Y/C separated video signal in the chart.
 - Set VCR to the mode A by remote controller.

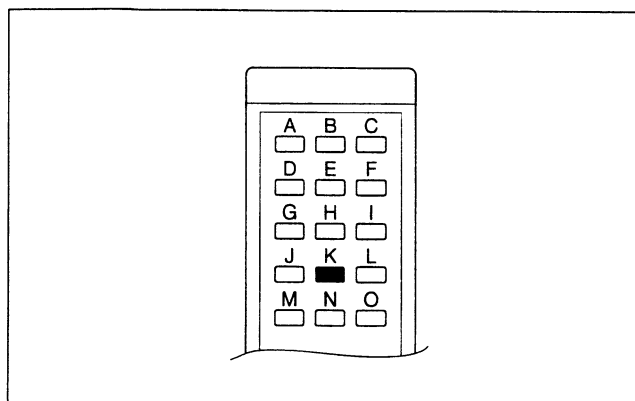


Fig. 3-3-1 Presetting unit

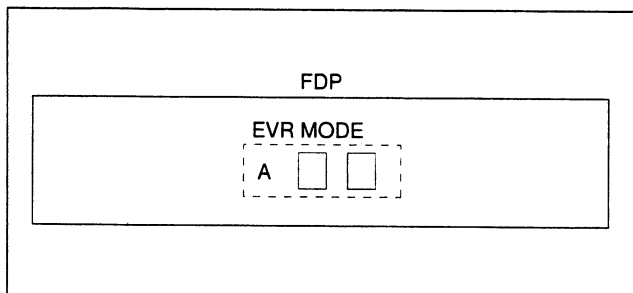


Fig. 3-3-2 EVR mode

3.3.1 Y level

Signal	• Colour bar
Mode	• EE
Equipment	• Oscilloscope
Measurement point	• Y OUT TERMINAL(75Ω TERMINATION)
Adjustment tool	• Presetting unit • Digit-key remote controller
EVR mode	• A : 11
Specification	• 1.00 ± 0.03 Vp-p (terminated)

- (1) Connect an oscilloscope to Y OUT TERMINAL.
- (2) Set EVR mode by pressing "K" button of the presetting unit more than 2 seconds.
- (3) Set "A : 11" pressing 1 digit key twice of the remote controller.
- (4) Adjust TV PROG "+" or "-" button for 1.00 ± 0.03 Vp-p (See Fig. 3-3-3).
- (5) Set normal VCR mode by pressing "K" button of the presetting unit again so adjustment data is memorized.

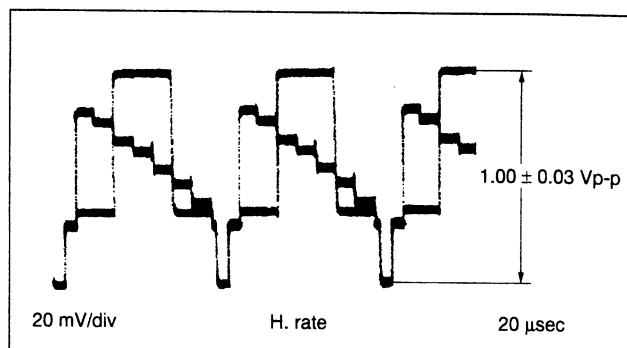


Fig. 3-3-3 EE Y level

3.3.2 SP/EP REC colour level

Signal	• Alignment tape [MH-2H] • Colour bar
Mode	• PB • REC → PB : SP/LP • S-VHS
Equipment	• Oscilloscope
Measurement point	• PB colour out
Trigger slope (-)	• TP111 (DRUM FF)
Adjustment tool	• Presetting unit • Digit-key remote controller • LPF fixture (PTU93006)
EVR mode	• A : 2
Specification	• "B" x $150 \pm 5\%$: SP • "B" x $110 \pm 5\%$: LP

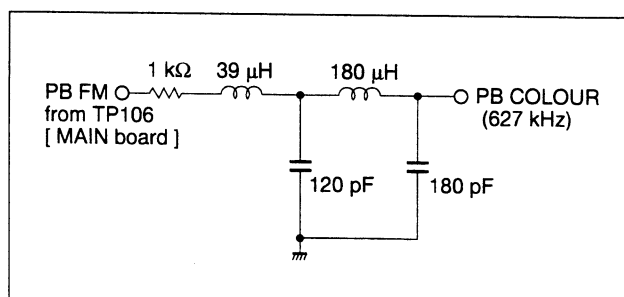


Fig. 3-3-4 LPF

- (1) Connect an oscilloscope to PB COLOUR of a LPF(refer to Fig. 3-3-4) and TP111(negative slope) on the MAIN board.
- (2) Playback the SP colour bar signal of MH-2H alignment tape.
- (3) Set the tracking of the Front panel to the Auto tracking off position by simultaneously pressing the TV PROG "+" and "-" buttons.
- (4) Adjust by pressing the TV PROG "+" or "-" buttons of the Front panel for maximum level of the colour waveform and make a note of the higher colour level "B".
- (5) Press the STOP/EJECT button and eject the MH-2H alignment tape.
- (6) Set EVR mode by pressing "K" button of the presetting unit more than 2 seconds.

- (7) Set "A : 2" by pressing 2 digit key of the remote controller.
- (8) Before recording, adjust TV PROG "+" or "-" button of the remote controller so that the higher level channel becomes $150 \pm 5\%$: SP ($110 \pm 5\%$: LP) of the note "B" level during playback as shown in Fig. 3-3-5.
- (9) Record a colour bar signal in SP (LP) mode, and playback recorded colour bar signal.
- (10) Set normal VCR mode by pressing "K" button again so adjustment data is memorized.

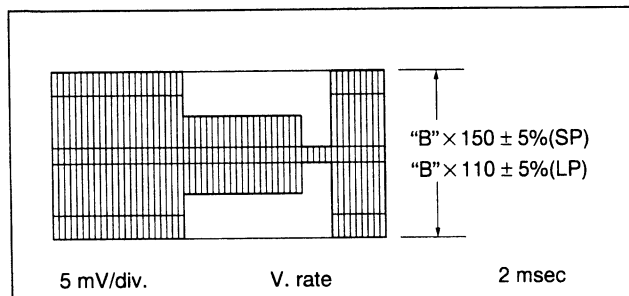


Fig. 3-3-5 REC colour level

3.3.3 PB Y level (S-VHS/VHS)

Signal	• Colour bar • S-VHS/VHS
Mode	• PB : SP
Equipment	• Oscilloscope
Measurement point	• Y OUT TERMINAL(75Ω TERMINATION)
Adjustment tool	• Presetting unit • Digit-key remote controller
EVR mode	• A : 11
Specification	• 1.00 ± 0.03 Vp-p (terminated)

- (1) Connect an oscilloscope to Y OUT TERMINAL.
- (2) Set EVR mode by pressing "K" button of the presetting unit more than 2 seconds.
- (3) Set "A : 11" pressing 1 digit key twice of the remote controller.
- (4) Record a colour bar signal in the S-VHS mode, and playback recorded colour bar signal.
- (5) Adjust TV PROG "+" or "-" button for 1.00 ± 0.03 Vp-p as shown in Fig. 3-3-6.
- (6) Set normal VCR mode by pressing "K" button of the presetting unit again so adjustment data is memorized.
- (7) Repeat steps (1) to (6) in the VHS mode.

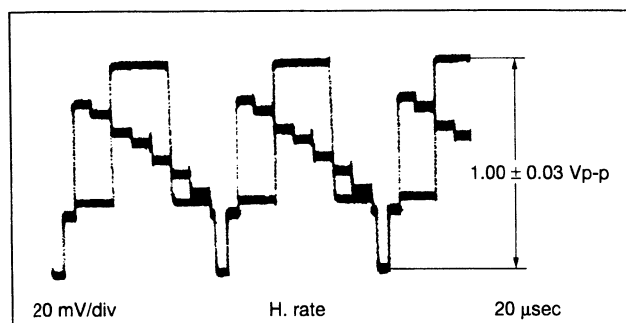


Fig. 3-3-6 PB Y level

3.3.4 S-VHS VIDEO EQ

Signal	• S INPUT • Video sweep
Mode	• REC → PB : SP/LP • S-VHS • EDIT - REC : OFF - PB : ON
Equipment	• Oscilloscope
Measurement point	• Y OUT TERMINAL(75Ω TERMINATION)
Trigger slope (-)	• TP111 (DRUM FF)
Adjustment tool	• Presetting unit • Digit-key remote controller
Specification	• 3.6 ± 0.2 scale : SP • 3.2 ± 0.2 scale : LP

- (1) Connect an oscilloscope to Y OUT TERMINAL and TP111 (negative slope).
- (2) Record a video sweep signal in S-VHS SP mode, then play it back.
- (3) Set EVR mode by pressing "K" button of the presetting unit more than 2 seconds.
- (4) Set "A : 3" by pressing 3 digit key of the remote controller.
- (5) When assuming the 100 KHz sweep signal marker on the bigger channel is four scales on the oscilloscope, adjust TV PROG "+" or "-" button on the front panel or the 10-key remote control so that the 3.00 MHz is set at 3.6 ± 0.2 scale (-2 ± 0.5 dB) while observing Y OUT of the S output (See Fig. 3-3-7).
- (6) The EVR mode is canceled by pressing the "K" button after the adjustment, and the adjusted value is stored.
- (7) Also, it records and plays back the sweep signal in the LP mode.
- (8) Carry out the step (3) and (4).
- (9) When assuming the 100 kHz sweep signal marker on the bigger channel is four scales on the oscilloscope, adjust TV PROG "+" or "-" button on the front panel or the 10-key remote control so that the 3.00 MHz is set at 3.2 ± 0.2 scale (-3 ± 0.5 dB) while observing Y OUT of the S output (See Fig. 3-3-7).

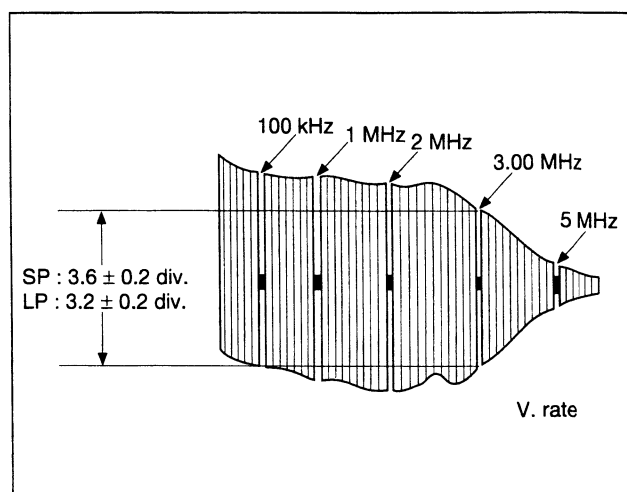


Fig. 3-3-7 S-VHS VIDEO EQ

3.3.5 D/A level

Signal	• Colour bar • S-VHS
Mode	• EE
Equipment	• Oscilloscope
Measurement point	• CN1003-3 pin (Y OUT) [2D S-VHS board]
Adjustment part	• VR1201 (Y LEVEL) [2D S-VHS board]
Specification (NOTE)	• 2.05 Vp-p (REFERENCE VALUE)

- (1) Connect the oscilloscope to the CN1003-3 pin(Y OUT) on the 2D S-VHS board.
- (2) Confirm the Y level value during external S input.
- (3) Switch the input signal to the external input, then adjust the VR1201 on the 2D S-VHS board so that the Y level value becomes the same level value which was confirmed at the step (2).

Note: • *The adjusted value of 2.05 Vp-p is a reference value which should be obtained during external S input. The value should be adjusted to the one which was confirmed at step (2).*

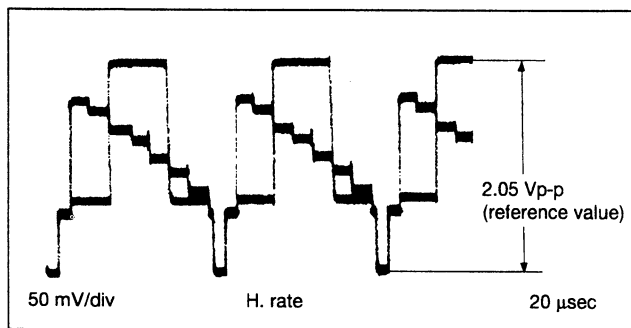


Fig. 3-3-8 D/A LEVEL

3.3.6 Pilot burst level

Signal	• Colour bar • S-VHS
Mode	• EE
Equipment	• Oscilloscope
Measurement point	• TP1001 (P. BURST LEVEL) [2D S-VHS board]
Adjustment part	• VR1202 (P. BURST LEVEL) [2D S-VHS board]
Specification	• "B" x 110 ± 10%

- (1) Connect the oscilloscope to the TP1001 (P. BURST LEVEL) on the 2D S-VHS board.
- (2) Load an S-VHS tape then set the unit to the S-VHS EE mode.
- (3) Adjust the VR1002 of the 2D S-VHS so that the pilot burst level becomes "B" x 110 ± 10% against the value of the burst level "B".

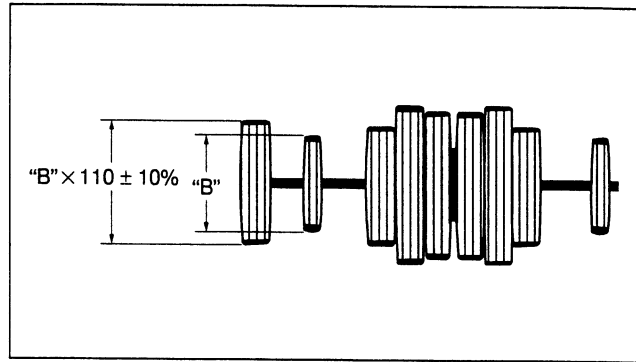


Fig. 3-3-9 PILOT BURST LEVEL

3.3.7 Auto picture

Signal	• Monoscope
Mode	• REC → PB : SP/LP • S-VHS
Adjustment tool	• Presetting unit [PTU94008]
Specification	• STOP mode

- (1) Record a monoscope signal in the SP mode.
- (2) Playback the recorded signal.
- (3) Press the "L" button of the presetting unit during playback.
- (4) Confirm that VCR will go into the STOP mode.
- (5) Repeat steps (2) to (4) in the LP mode.

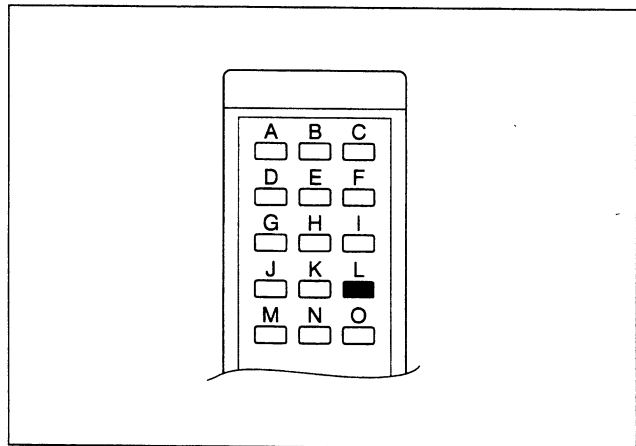


Fig. 3-3-10 Presetting unit

3.4 ON SCREEN CIRCUIT

Note: • Set VCR to the mode A by remote controller.

3.4.1 Character position

Signal	• No signal
Mode	• EE
Equipment	• TV-monitor
Adjustment tool	• Presetting unit [PTU94008] • Digit-key remote controller
Specification	• Character center

- (1) Press the MENU button and display the on screen character.
- (2) Observe TV-monitor and center position of character by pressing "H" button of the presetting unit.

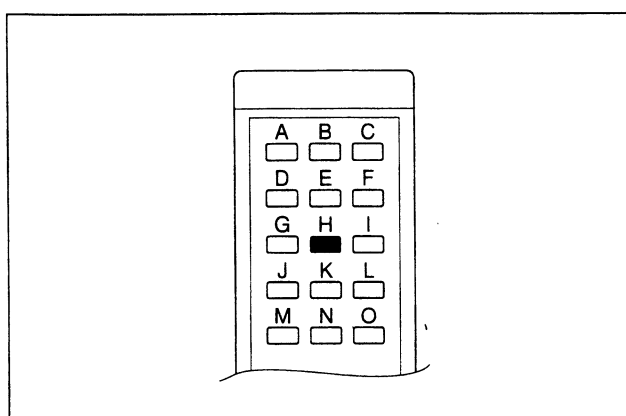


Fig. 3-4-1 Presetting unit

3.5 SYSCON CIRCUIT

Notes: • Unless otherwise specified, all measurement point and adjustment parts are located on the MAIN BOARD.
• When perform this adjustment, remove the MECHANISM assembly.

3.5.1 Timer clock

Signal	• No signal
Mode	• EE
Equipment	• Frequency counter
Measurement point	• TL3001 round (SYS. CLK)
Adjustment part	• C3018 (TIMER CLOCK)
Specification	• 1024.008 ± 0.001 Hz [976.5549 ± 0.0010 μ sec.]

- (1) Connect the frequency counter to TL3001(SYS.CLK) round and GND.
- (2) Connect the short wire between TL3003(TEST) round and Vcc(5V).
- (3) Short the leads of capacitor C3015 once in order to re-set the IC3001.
- (4) Disconnect the short wire between TL3003 and Vcc then connect it again quickly.
- (5) Adjust the C3018 trimmer capacitor so that the output from TL3001(SYS.CLK) falls within the 1024.008 ± 0.001 Hz (976.5549 ± 0.0010 μ sec.) range.

3.6 AUDIO CIRCUIT

Notes: • Unless otherwise specified, all measurement point and adjustment parts are located on the MAIN BOARD.
• This adjustment should be done after the video circuit SP and LP REC colour level are adjusted.
• GND(Ground) should be taken from the tuner board shield.

3.6.1 REC FM level

Signal	• AUX • VIDEO : Colour bar • AUDIO : No signal
Mode	• REC $\rightarrow$ PB : LP • S-VHS
Equipment	• Oscilloscope
Measurement point	• TP2253 (A. PB. FM)
Trigger slope (-)	• TP111 (DRUM FF)
Adjustment part	• VR2251 (FMA REC FM)
Specification	• 800 ± 100 mVp-p

- (1) Connect an oscilloscope to TP2253.
- (2) Record a colour bar signal without an audio signal in S-VHS LP mode then playback.
- (3) Adjust VR2251 for 800 mVp-p playback level of higher channel level before recording.
- (4) Confirm that the lower channel level is more than 550 mVp-p.

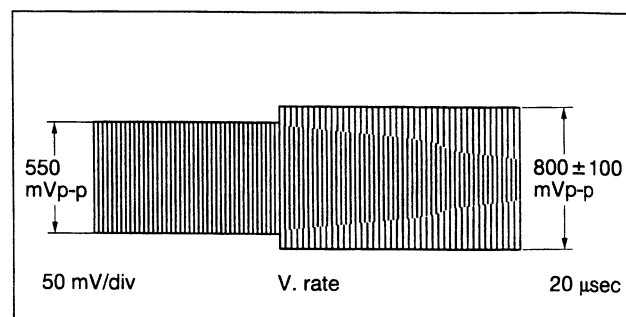


Fig. 3-6-1 Audio REC FM level

SECTION 4 CHARTS AND DIAGRAMS

NOTES OF SCHEMATIC DIAGRAM

Safety precautions

The Components identified by the symbol  are critical for safety. For continued safety, replace safety critical components only with manufacturer's recommended parts.

1. Units of components on the schematic diagram

Unless otherwise specified.

- 1) All resistance values are in ohm, 1/6 W, 1/8 W (refer to parts list).
Chip resistors are 1/16 W.
K: K Ω (1000 Ω), M: M Ω (1000K Ω)
- 2) All capacitance values are in μ F, (P: PF).
- 3) All inductance values are in μ H, (m: mH).
- 4) All diodes are 1SS133, MA165 or IN4148M (refer to parts list).

2. Indications of control voltage

AUX : Active at high

AUX or AUX(L) : Active at low

3. Interpreting Connector indications



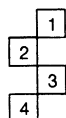
Removable connector



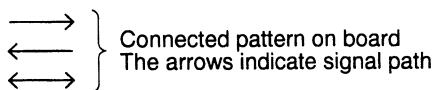
Wire soldered directly on board



Non-removable Board connector



Board to Board



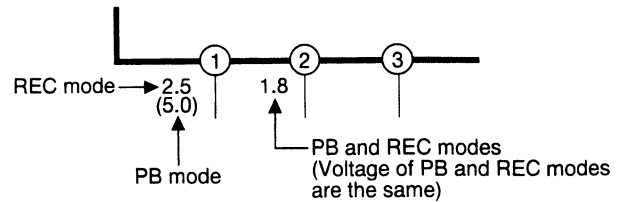
Connected pattern on board
The arrows indicate signal path

4. Voltage measurement

- 1) Video circuits
REC : Colour bar signal in SP mode, normal VHS mode
PB : Alignment tape, colour bar SP mode, normal VHS mode
— : Unmeasurable or unnecessary to measure
- 2) Audio circuits
REC : 1KHz, -8 dBs sine wave signal in SP mode, Normal VHS mode
PB : REC then playback it
- 3) Movie Camera circuits
Measured using a correctly illuminated gray scale or colour bar test charts in the E-E mode

4) Indication on schematic diagram

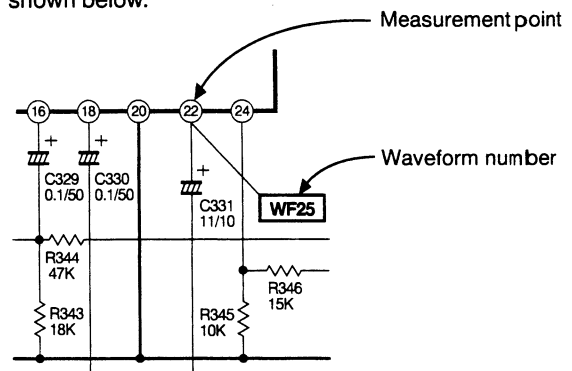
Voltage Indications for REC and PB mode on the schematic diagram are as shown below.



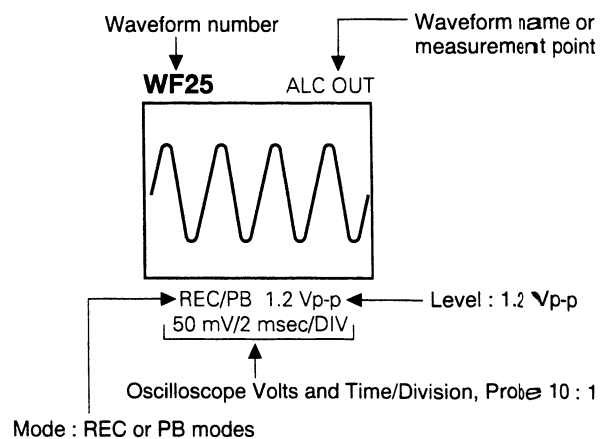
Note: If the voltages are not indicated on the schematic diagram, refer to the voltage charts.

5. Waveform measurement

- 1) Video circuits
REC : Colour bar signal in SP mode, normal VHS mode
PB : Alignment tape, colour bar SP mode, normal VHS mode
- 2) Audio circuits
REC : 1KHz, -8 dBs sine wave signal in SP mode, normal VHS mode
PB : REC then playback it
- 3) Movie Camera circuits
Measured using a correctly illuminated gray scale or colour bar test charts in the E-E mode
- 4) Indication on schematic diagram
Waveform indications on the schematic diagram are as shown below.

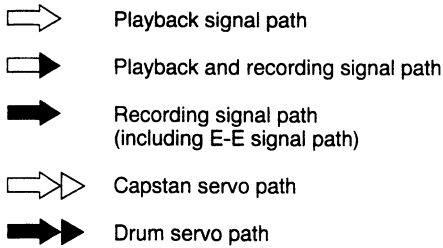


5) Waveform indications

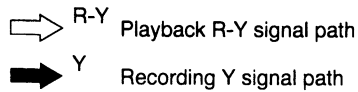


6. Signal path Symbols

The arrows indicate the signal path as follows.

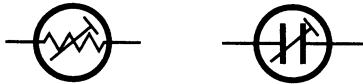


(Example)



7. Indication of the parts for adjustments

The parts for the adjustments are surrounded with the circle as shown below.



8. Indication of the parts not mounted on the circuit board

"OPEN" is indicated by the parts not mounted on the circuit board.



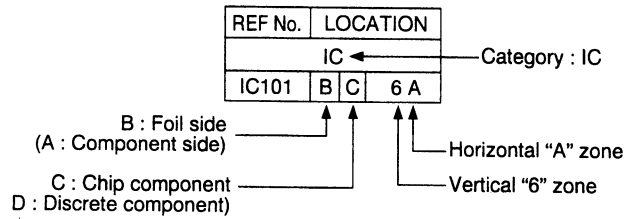
CIRCUIT BOARD NOTES

1. Foil and Component sides

- 1) Foil side (B side) :
Parts on the foil side seen from foil face (pattern face) are indicated.
- 2) Component side (A side) :
Parts on the component side seen from component face (parts face) indicated.

2. Parts location guides

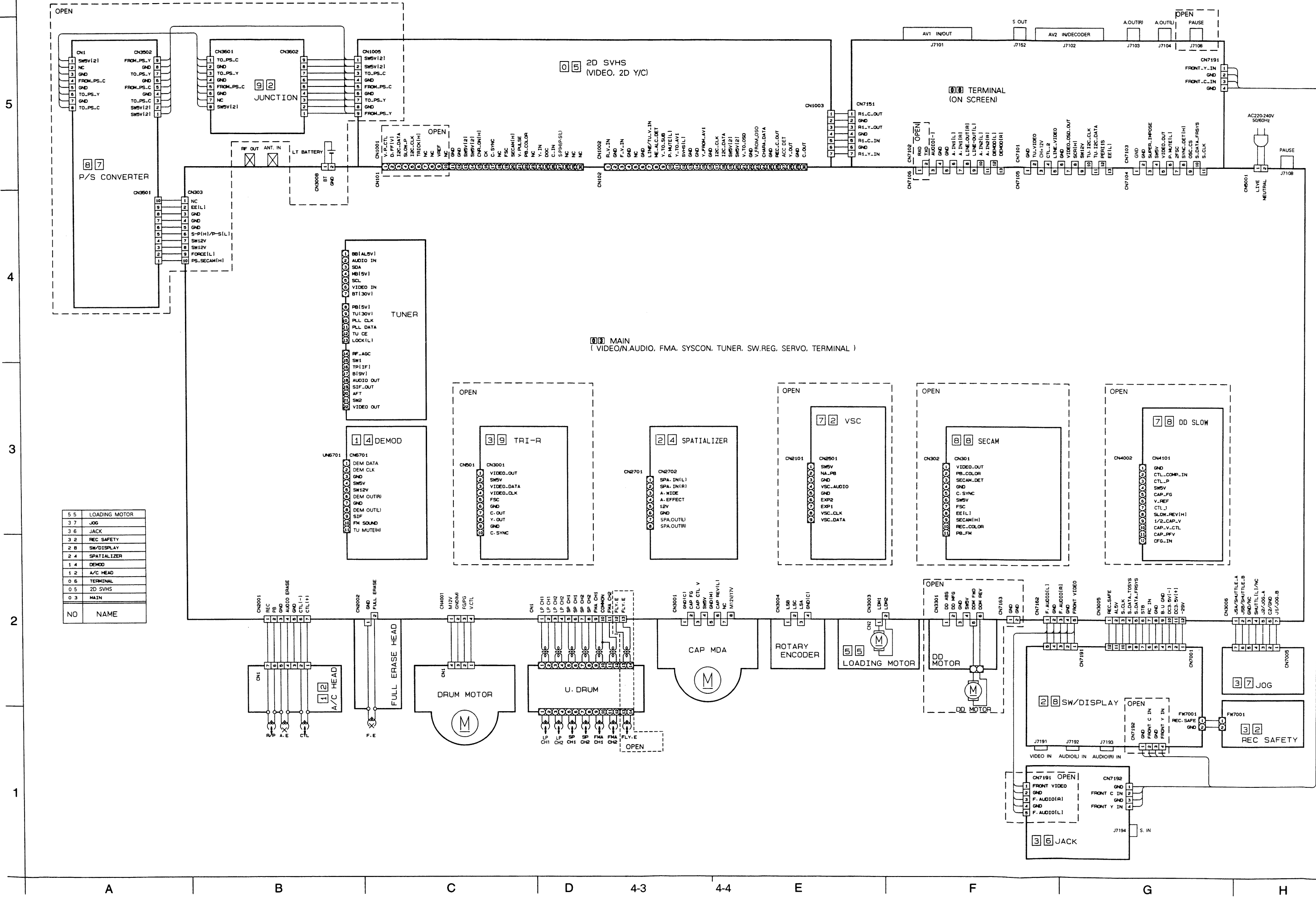
Parts location are indicated by guide scale on the circuit board.

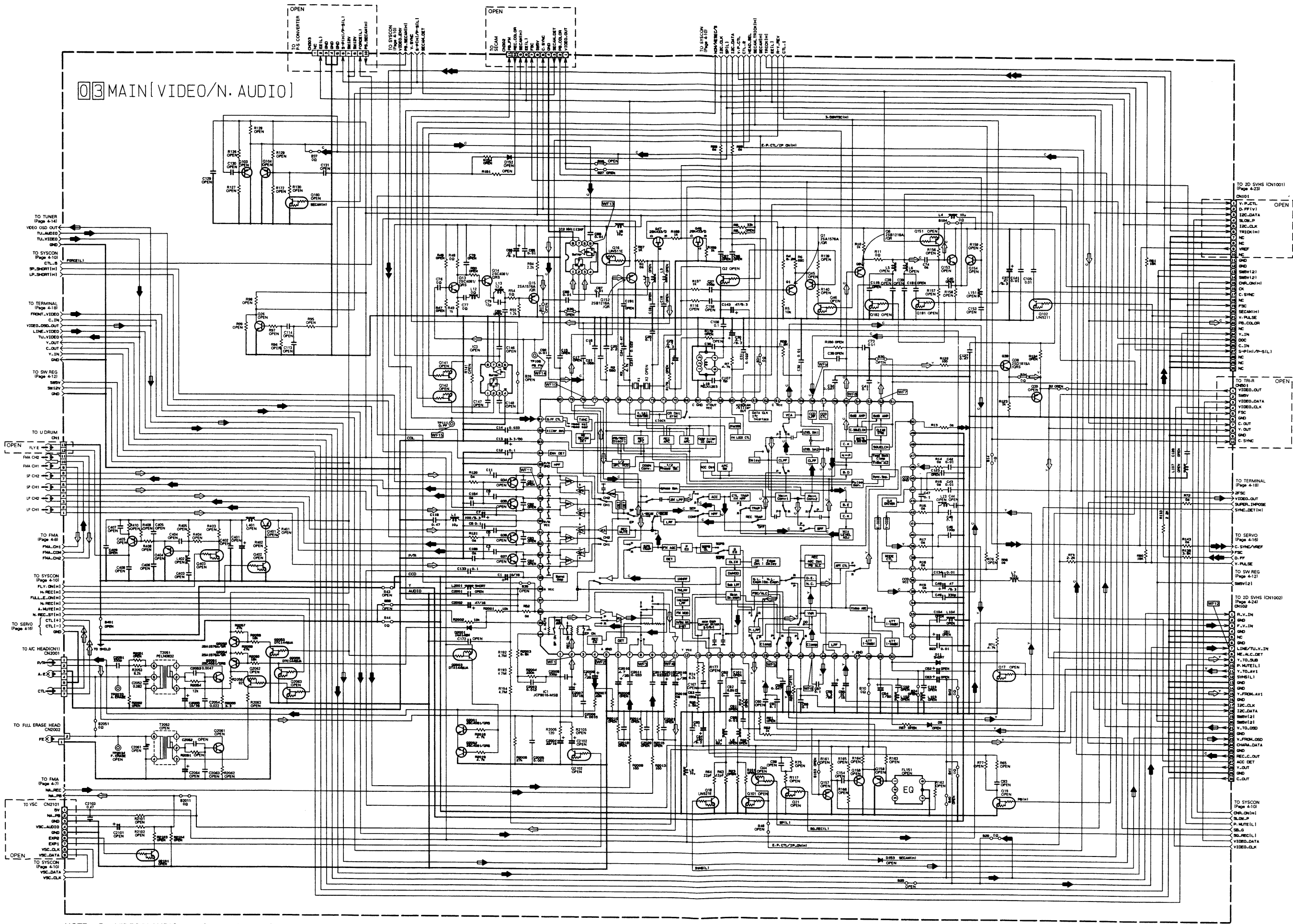


Note:

For general information in service manual, please refer to the Service Manual of GENERAL INFORMATION Edition 4 No. 82054D (January 1994).

4.1 BOARD INTERCONNECTIONS

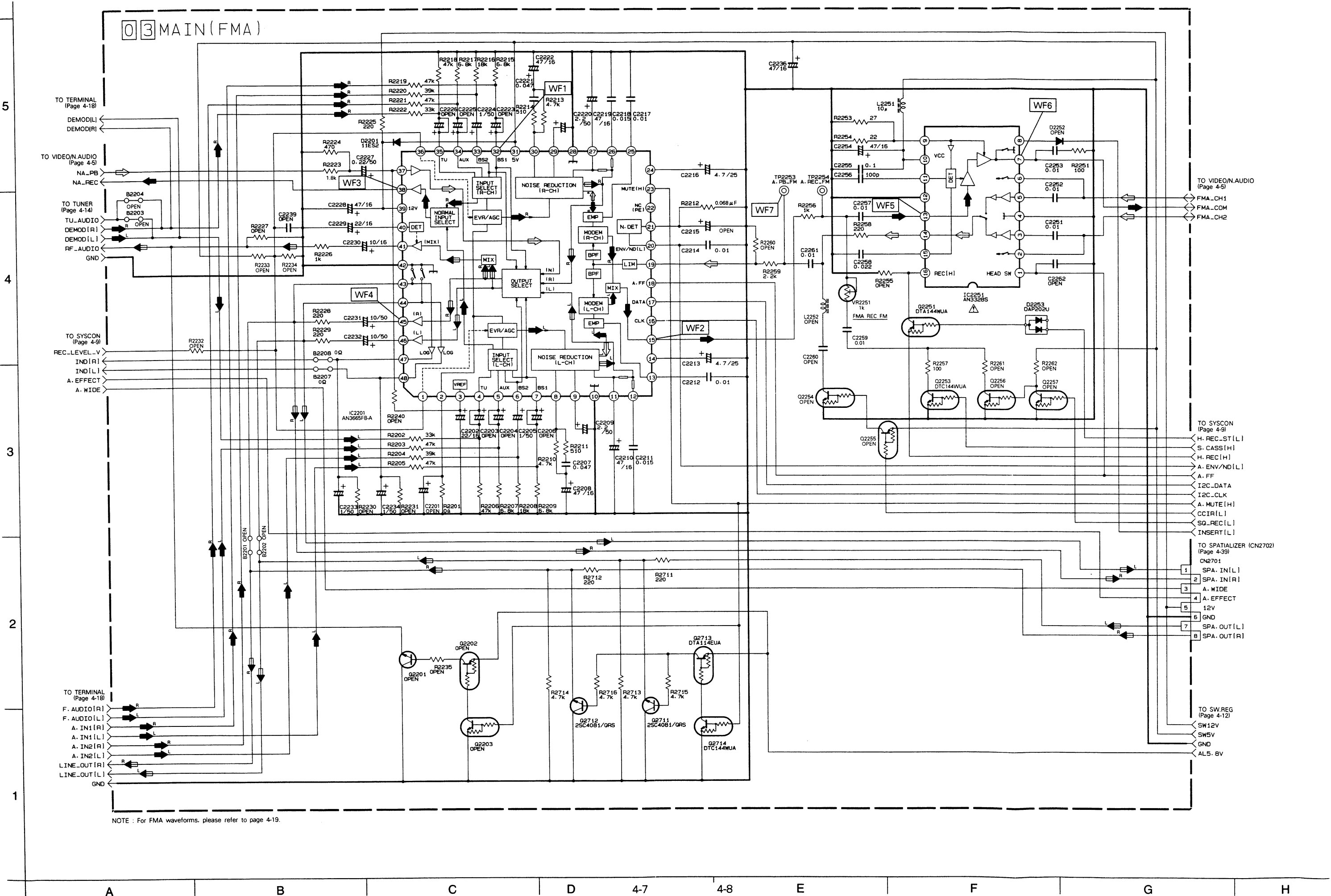




NOTE : For VIDEO/N.AUDIO waveforms, please refer to page 4-19.

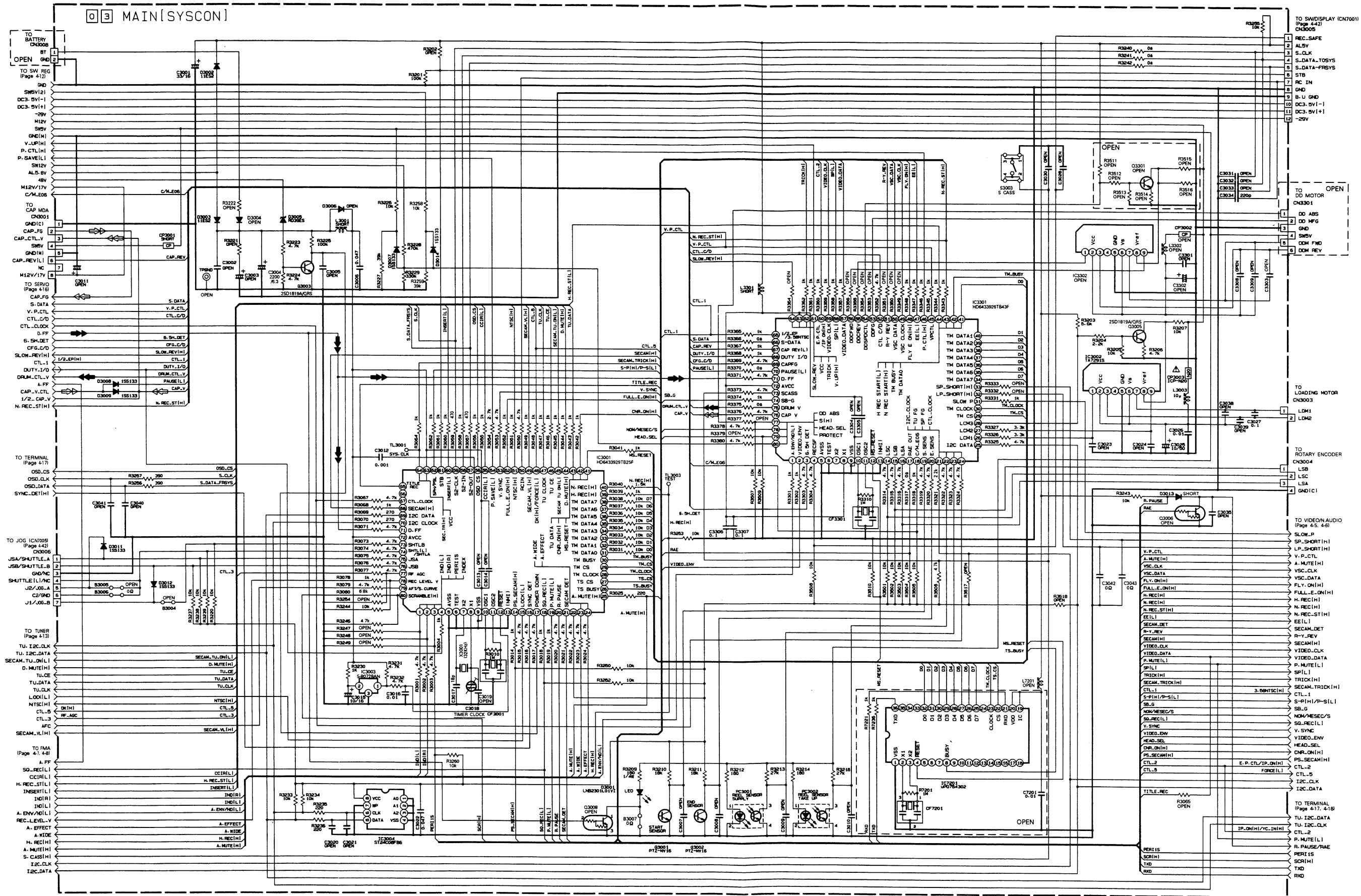
A B C D 4-5 4-6 E F G H

4.3 FMA SCHEMATIC DIAGRAM



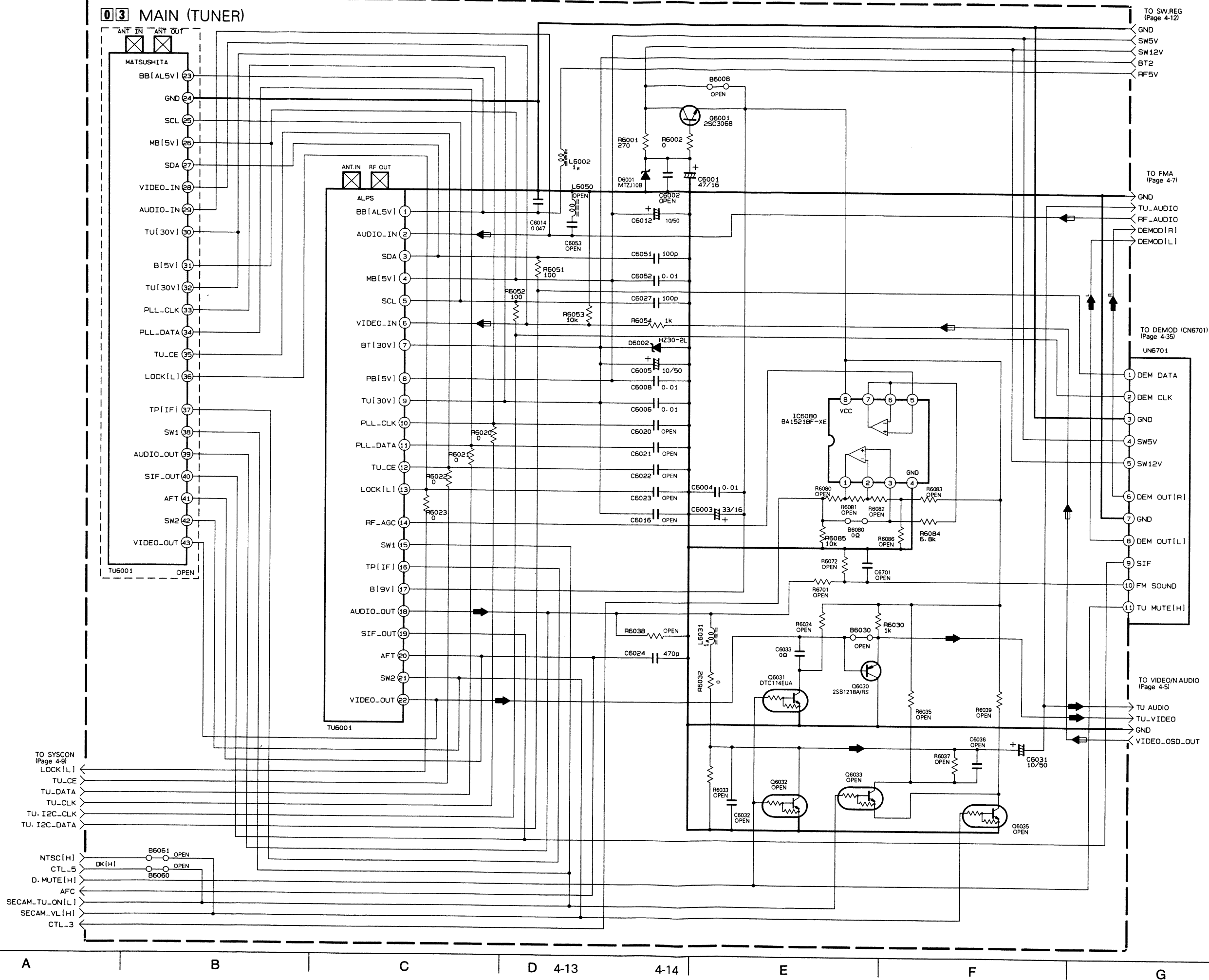
NOTE : For FMA waveforms, please refer to page 4-19.

4.4 SYSTEM CONTROL SCHEMATIC DIAGRAM

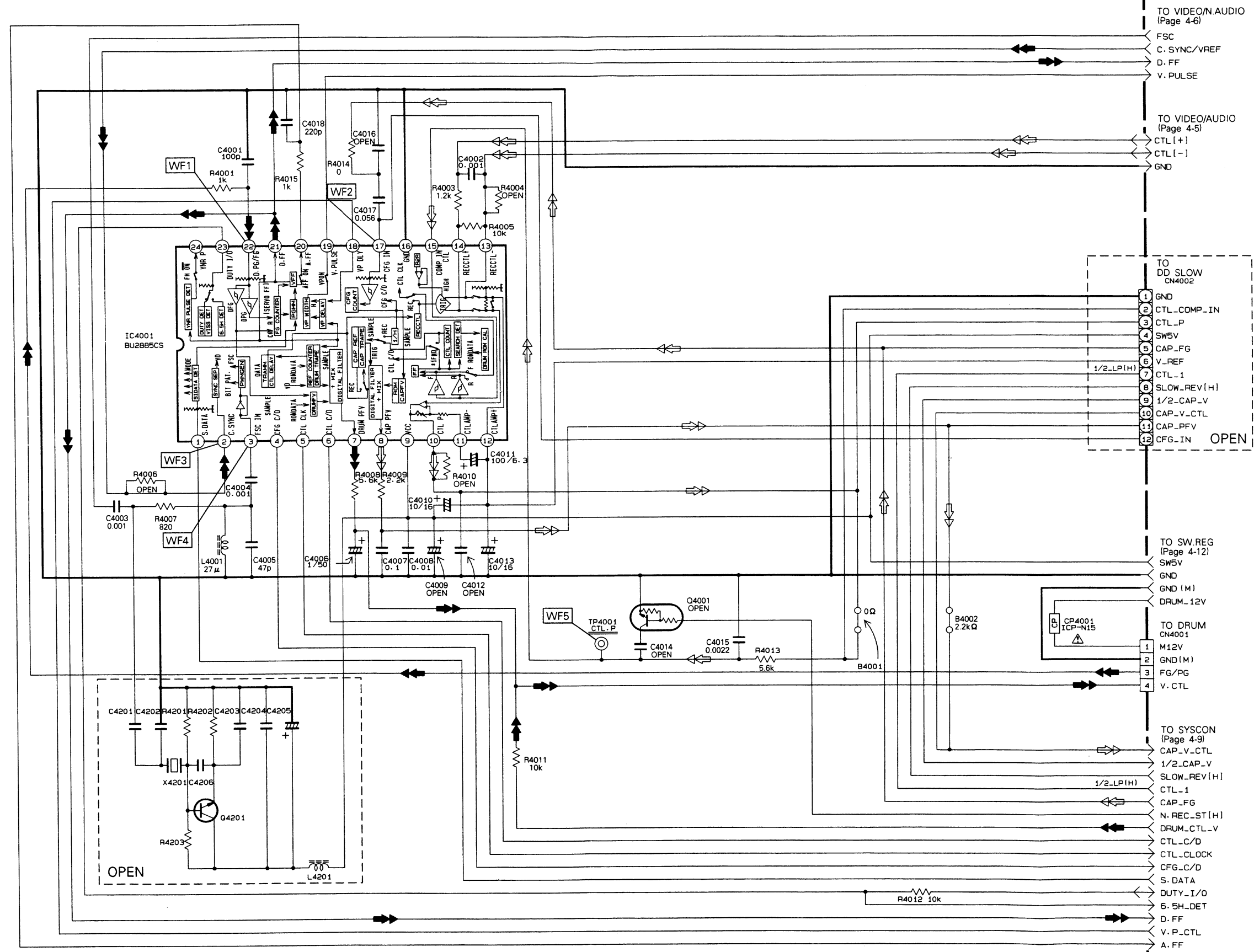


NOTE : The system control circuit of this model has an automatic recognition about the ON-OFF control of the DOCTOR SYSTEM.

4.6 TUNER SCHEMATIC DAIGRAM



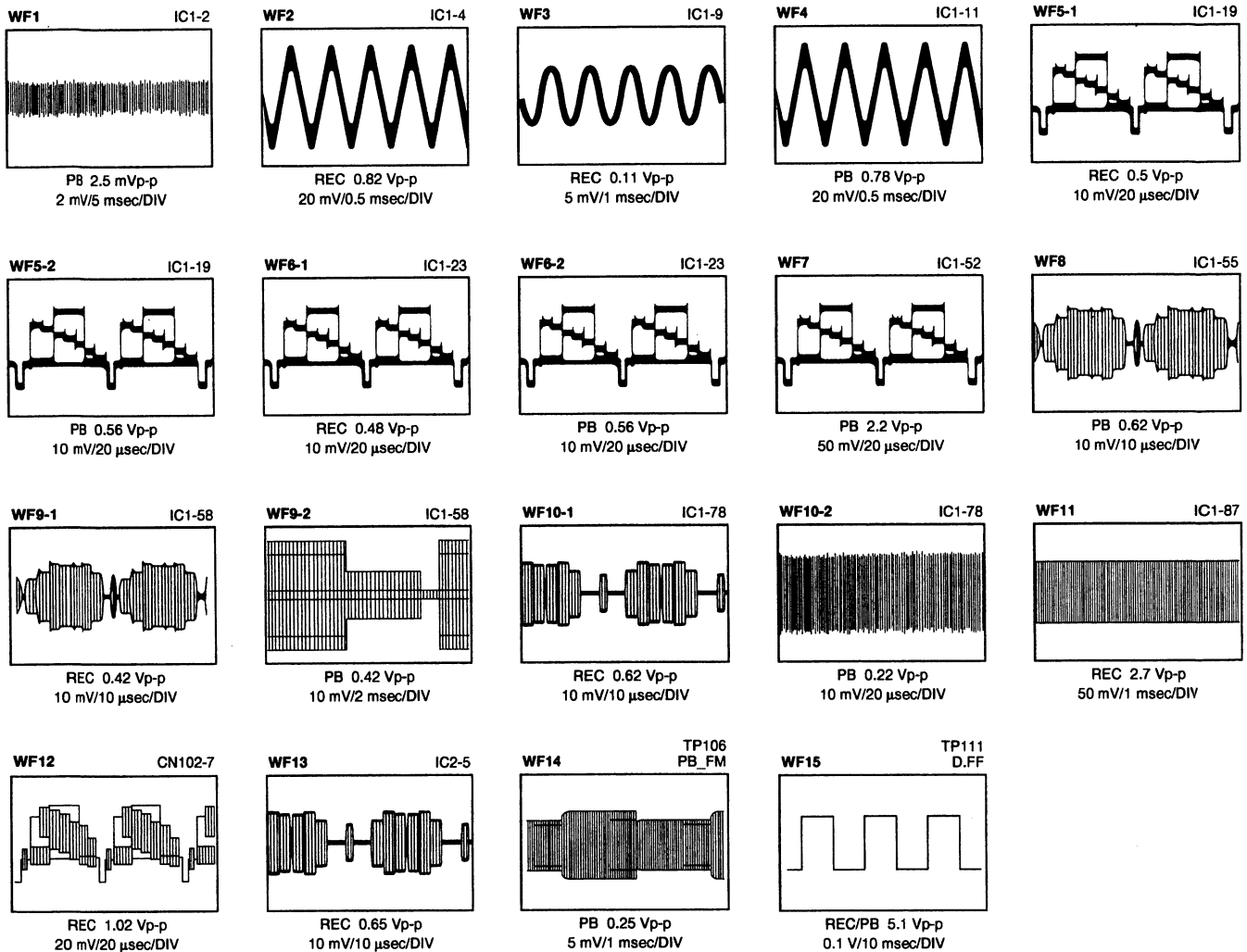
4.7 SERVO SCHEMATIC DIAGRAM



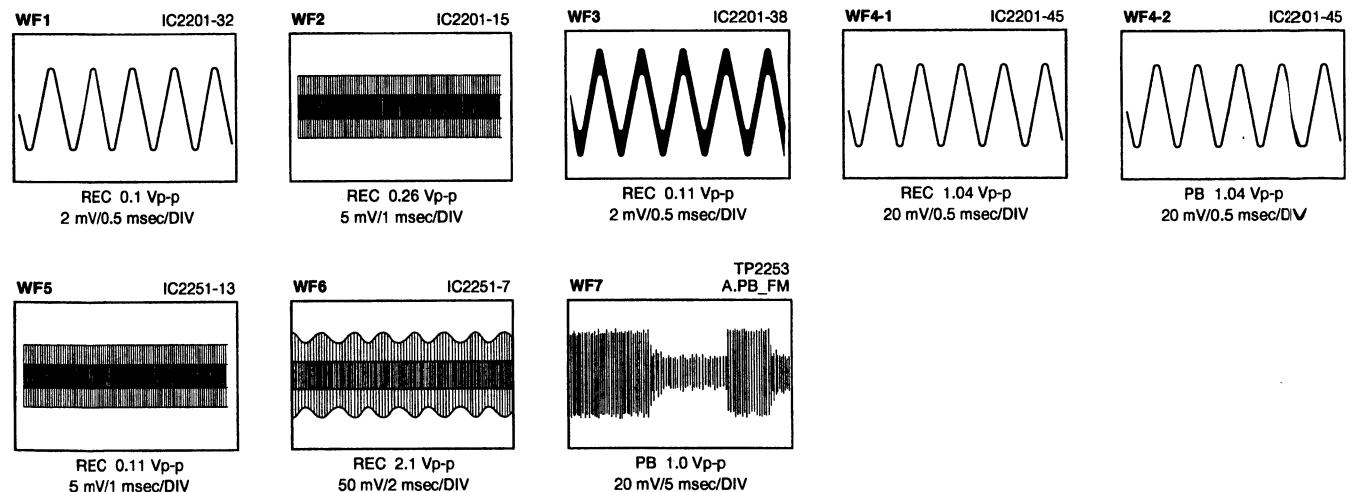
NOTE : For SERVO waveforms, please refer to page 4-19.

WAVEFORMS

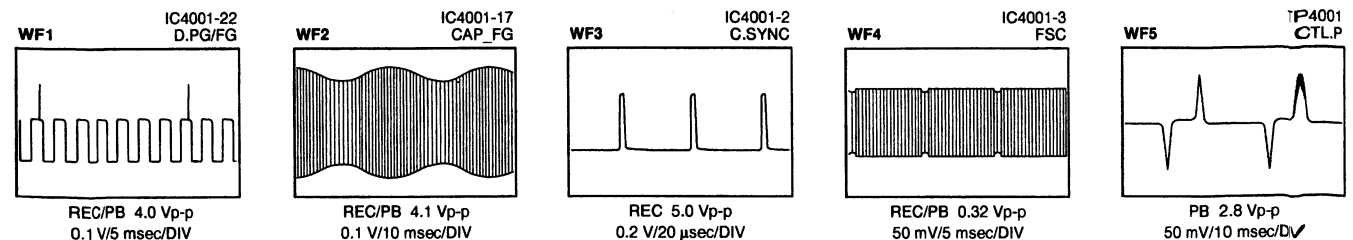
— VIDEO/N.AUDIO —



— FMA —



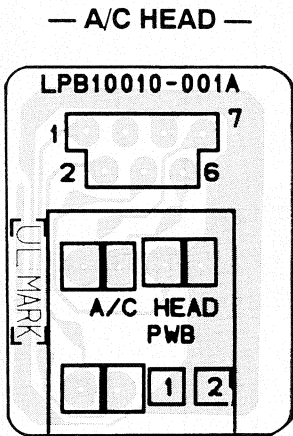
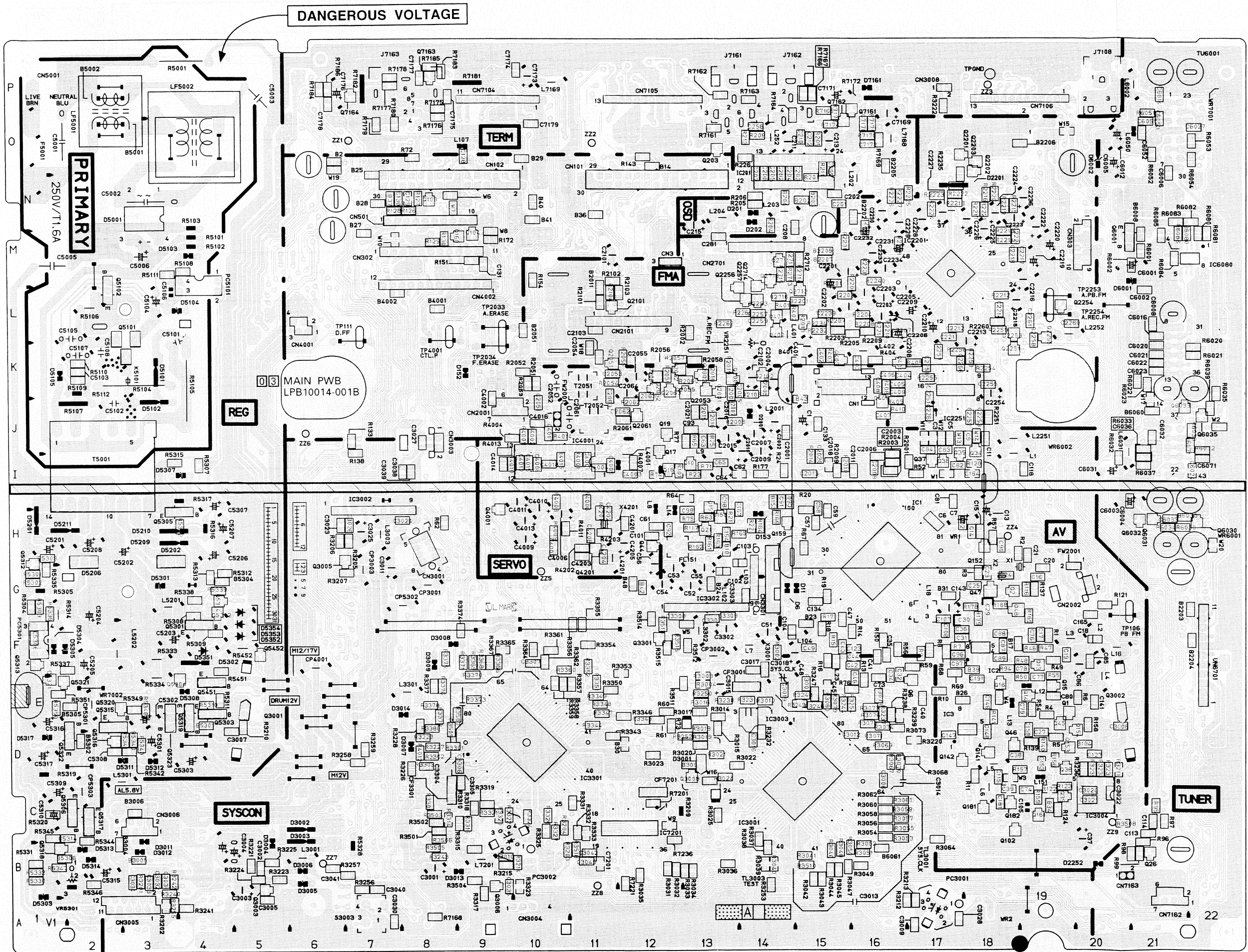
— SERVO —



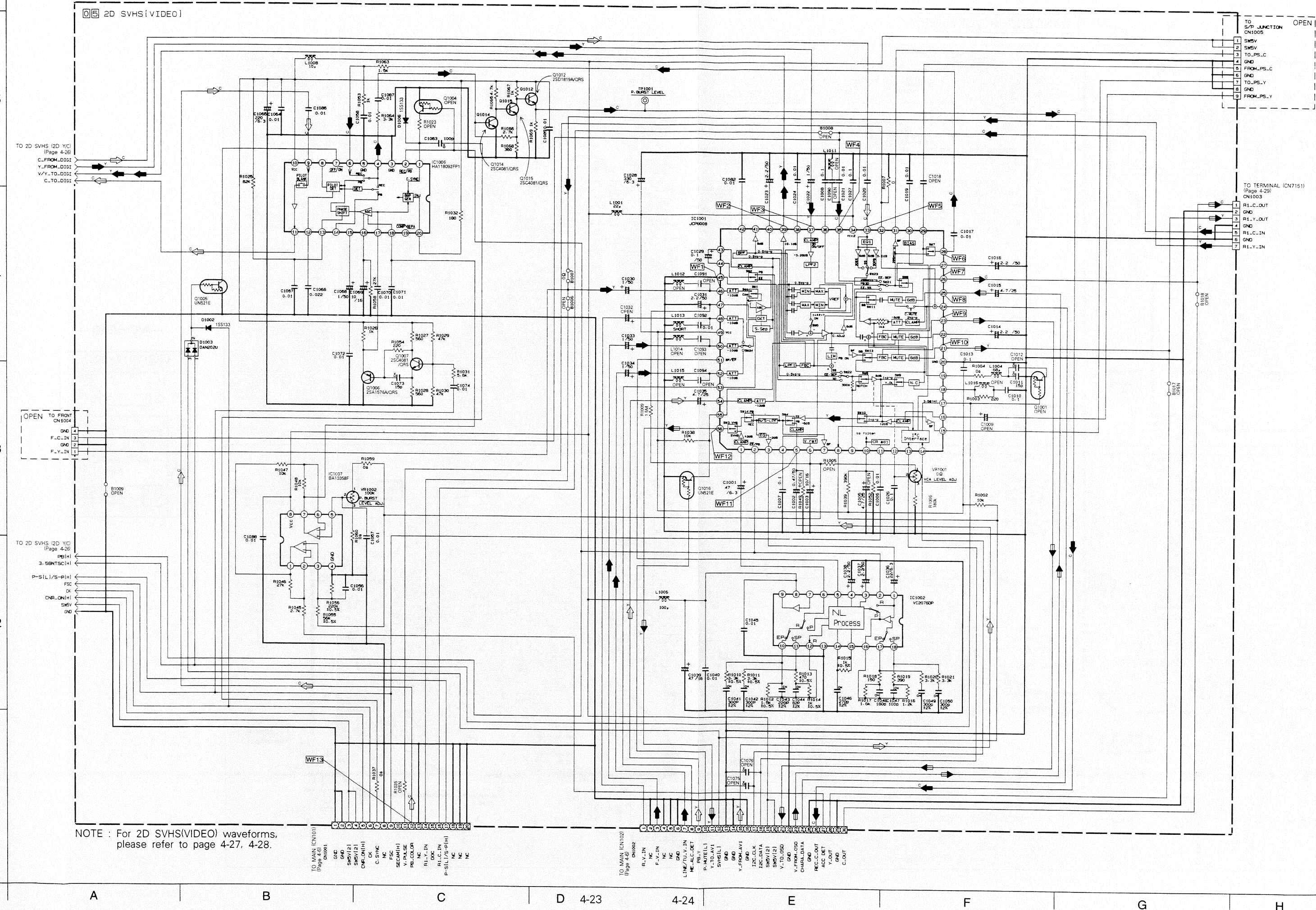
COMPONENT PARTS LOCATION GUIDE <MAIN>

REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION
CAPACITOR		C2016	13J	C5204	15N	REF201	15N	REF305	3H	REF2015	13J	REF2015	13J	REF2015	13J
C2017	15L	C5205	17K	C5206	17K	REF202	17K	REF306	1H	REF2016	13J	REF2016	13J	REF2016	13J
C2018	17L	C5207	17K	C5208	17K	REF203	17K	REF307	1H	REF2017	13J	REF2017	13J	REF2017	13J
C2019	17L	C5209	17K	C5210	17K	REF204	17K	REF308	1H	REF2018	13J	REF2018	13J	REF2018	13J
C2020	17L	C5211	17K	C5212	17K	REF205	17K	REF309	1H	REF2019	13J	REF2019	13J	REF2019	13J
C2021	17L	C5213	17K	C5214	17K	REF206	17K	REF310	1H	REF2020	13J	REF2020	13J	REF2020	13J
C2022	17L	C5215	17K	C5216	17K	REF207	17K	REF311	1H	REF2021	13J	REF2021	13J	REF2021	13J
C2023	17L	C5217	17K	C5218	17K	REF208	17K	REF312	1H	REF2022	13J	REF2022	13J	REF2022	13J
C2024	17L	C5219	17K	C5220	17K	REF209	17K	REF313	1H	REF2023	13J	REF2023	13J	REF2023	13J
C2025	17L	C5221	17K	C5222	17K	REF210	17K	REF314	1H	REF2024	13J	REF2024	13J	REF2024	13J
C2026	17L	C5223	17K	C5224	17K	REF211	17K	REF315	1H	REF2025	13J	REF2025	13J	REF2025	13J
C2027	17L	C5225	17K	C5226	17K	REF212	17K	REF316	1H	REF2026	13J	REF2026	13J	REF2026	13J
C2028	17L	C5227	17K	C5228	17K	REF213	17K	REF317	1H	REF2027	13J	REF2027	13J	REF2027	13J
C2029	17L	C5229	17K	C5230	17K	REF214	17K	REF318	1H	REF2028	13J	REF2028	13J	REF2028	13J
C2030	17L	C5231	17K	C5232	17K	REF215	17K	REF319	1H	REF2029	13J	REF2029	13J	REF2029	13J
C2031	17L	C5233	17K	C5234	17K	REF216	17K	REF320	1H	REF2030	13J	REF2030	13J	REF2030	13J
C2032	17L	C5235	17K	C5236	17K	REF217	17K	REF321	1H	REF2031	13J	REF2031	13J	REF2031	13J
C2033	17L	C5237	17K	C5238	17K	REF218	17K	REF322	1H	REF2032	13J	REF2032	13J	REF2032	13J
C2034	17L	C5239	17K	C5240	17K	REF219	17K	REF323	1H	REF2033	13J	REF2033	13J	REF2033	13J
C2035	17L	C5241	17K	C5242	17K	REF220	17K	REF324	1H	REF2034	13J	REF2034	13J	REF2034	13J
C2036	17L	C5243	17K	C5244	17K	REF221	17K	REF325	1H	REF2035	13J	REF2035	13J	REF2035	13J
C2037	17L	C5245	17K	C5246	17K	REF222	17K	REF326	1H	REF2036	13J	REF2036	13J	REF2036	13J
C2038	17L	C5247	17K	C5248	17K	REF223	17K	REF327	1H	REF2037	13J	REF2037	13J	REF2037	13J
C2039	17L	C5249	17K	C5250	17K	REF224	17K	REF328	1H	REF2038	13J	REF2038	13J	REF2038	13J
C2040	17L	C5251	17K	C5252	17K	REF225	17K	REF329	1H	REF2039	13J	REF2039	13J	REF2039	13J
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C2042	17L	C5255	17K	C5256	17K	REF227	17K	REF331	1H	REF2041	13J	REF2041	13J	REF2041	13J
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C2045	17L	C5261	17K	C5262	17K	REF230	17K	REF334	1H	REF2044	13J	REF2044	13J	REF2044	13J
C2046	17L	C5263	17K	C5264	17K	REF231	17K	REF335	1H	REF2045	13J	REF2045	13J	REF2045	13J
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C2049	17L	C5269	17K	C5270	17K	REF234	17K	REF338	1H	REF2048	13J	REF2048	13J	REF2048	13J
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C2051	17L	C5273	17K	C5274	17K	REF236	17K	REF340	1H	REF2050	13J	REF2050	13J	REF2050	13J
C2052	17L	C5275	17K	C5276	17K	REF237	17K	REF341	1H	REF2051	13J	REF2051	13J	REF2051	13J
C2053	17L	C5277	17K	C5278	17K	REF238	17K	REF342	1H	REF2052	13J	REF2052	13J	REF2052	13J
C2054	17L	C5279	17K	C5280	17K	REF239	17K	REF343	1H	REF2053	13J	REF2053	13J	REF2053	13J
C2055	17L	C5281	17K	C5282	17K	REF240	17K	REF344	1H	REF2054	13J	REF2054	13J	REF2054	13J
C2056	17L	C5283	17K	C5284	17K	REF241	17K	REF345	1H	REF2055	13J	REF2055	13J	REF2055	13J
C2057	17L	C5285	17K	C5286	17K	REF242	17K	REF346	1H	REF2056	13J	REF2056	13J	REF2056	13J
C2058	17L	C5287	17K	C5288	17K	REF243	17K	REF347	1H	REF2057	13J	REF2057	13J	REF2057	13J
C2059	17L	C5289	17K	C5290	17K	REF244	17K	REF348	1H	REF2058	13J	REF2058	13J	REF2058	13J
C2060	17L	C5291	17K	C5292	17K	REF245	17K	REF349	1H	REF2059	13J	REF2059	13J	REF2059	13J
C2061	17L	C5293	17K	C5294	17K	REF246	17K	REF350	1H	REF2060	13J	REF2060	13J	REF2060	13J
C2062	17L	C5295	17K	C5296	17K	REF247	17K	REF351	1H	REF2061	13J	REF2061	13J	REF2061	13J
C2063	17L	C5297	17K	C5298	17K	REF248	17K	REF352	1H	REF2062	13J	REF2062	13J	REF2062	13J
C2064	17L	C5299	17K	C5300	17K	REF249	17K	REF353	1H	REF2063	13J	REF2063	13J	REF2063	13J
C2065	17L	C5301	17K	C5302	17K	REF250	17K	REF354	1H	REF2064	13J	REF2064	13J	REF2064	13J
C2066	17L	C5303	17K	C5304	17K	REF251	17K	REF355	1H	REF2065	13J	REF2065	13J	REF2065	13J
C2067	17L	C5305	17K	C5306	17K	REF252	17K	REF356	1H	REF2066	13J	REF2066	13J	REF2066	13J
C2068	17L	C5307	17K	C5308	17K	REF253	17K	REF357	1H	REF2067	13J	REF2067	13J	REF2067	13J
C2069	17L	C5309	17K	C5310	17K	REF254	17K	REF358	1H	REF2068	13J	REF2068	13J	REF2068	13J
C2070	17L	C5311	17K	C5312	17K	REF255	17K	REF359	1H	REF2069	13J	REF2069	13J	REF2069	13J
C2071	17L	C5313	17K	C5314	17K	REF256	17K	REF360	1H	REF2070	13J	REF2070	13J	REF2070	13J
C2072	17L	C5315	17K	C5316	17K	REF257	17K	REF361	1H	REF2071	13J	REF2071	13J	REF2071	13J
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C2074	17L	C5319	17K	C5320	17K	REF259	17K	REF363	1H	REF2073	13J	REF2073	13J	REF2073	13J
C2075	17L	C5321	17K	C5322	17K	REF260	17K	REF364	1H	REF2074	13J	REF2074	13J	REF2074	13J
C2076	17L	C5323	17K	C5324	17K	REF261	17K	REF365	1H	REF2075	13J	REF2075	13J	REF2075	13J
C2077	17L	C5325	17K	C5326	17K	REF262	17K	REF366	1H	REF2076	13J	REF2076	13J	REF2076	13J
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C2079	17L	C5329	17K	C5330	17K	REF264	17K	REF368	1H	REF2078	13J	REF2078	13J	REF2078	13J
C2080	17L	C5331	17K	C5332	17K	REF265	17K	REF369	1H	REF2079	13J	REF2079	13J	REF2079	13J
C2081	17L	C5333	17K	C5334	17K	REF266	17K	REF370	1H	REF2080	13J	REF2080	13J	REF2080	13J
C2082	17L	C5335	17K	C5336	17K	REF267	17K	REF371	1H	REF2081	13J	REF2081	13J	REF2081	13J
C2083	17L	C5337	17K	C5338	17K	REF268	17K	REF372	1H	REF2082	13J	REF2082	13J	REF2082	13J
C2084	17L	C5339	17K	C5340	17K	REF269	17K	REF373	1H	REF2083	13J	REF2083	13J	REF2083	13J
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C2086	17L	C5343	17K	C5344	17K	REF271	17K	REF375	1H	REF2085	13J	REF2085	13J	REF2085	13J
C2087	17L	C5345	17K	C5346	17K	REF272	17K	REF376	1H	REF2086	13J	REF2086	13J	REF2086	13J
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C2089	17L	C5349	17K	C5350	17K	REF274	17K	REF378	1H	REF2088	13J	REF2088	13J	REF2088	13J
C2090	17L	C5351	17K	C5352	17K	REF275	17K	REF379	1H	REF2089	13J	REF2089	13J	REF2089	13J
C2091	17L	C5353	17K	C5354	17K	REF276	17K	REF380	1H	REF2090	13J	REF2090	13J	REF2090	13J
C2092	17L	C5355	17K	C5356	17K	REF277	17K	REF381	1H	REF2091	13J	REF2091	13J	REF2091	13J
C2093	17L	C5357	17K	C5358	17K	REF278	17K	REF382	1H	REF2092	13J	REF2092	13J	REF2092	13J
C2094	17L	C5359	17K	C5360	17K	REF279	17K	REF383	1H	REF2093	13J	REF2093	13J	REF2093	13J
C2095	17L	C5361	17K	C5362	17K	REF280	17K	REF384	1H	REF2094	13J	REF2094	13J	REF2094	13J
C2096	17L	C5363	17K	C5364	17K	REF281	17K	REF385	1H	REF2095	13J	REF2095	13J	REF2095	13J
C2097	17L	C5365	17K	C5366	17K	REF282	17K	REF386	1H	REF2096	13J	REF2096	13J	REF2096	13J
C2098	17L	C5367	17K	C5368	17K	REF283	17K	REF387	1H	REF2097	13J	REF2097	13J	REF2097	13J
C2099	17L	C5369	17K	C5370	17K	REF284	17K	REF388	1H	REF2098	13J	REF2098	13J	REF2098	13J
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4.9 MAIN AND A/C HEAD CIRCUIT BOARDS

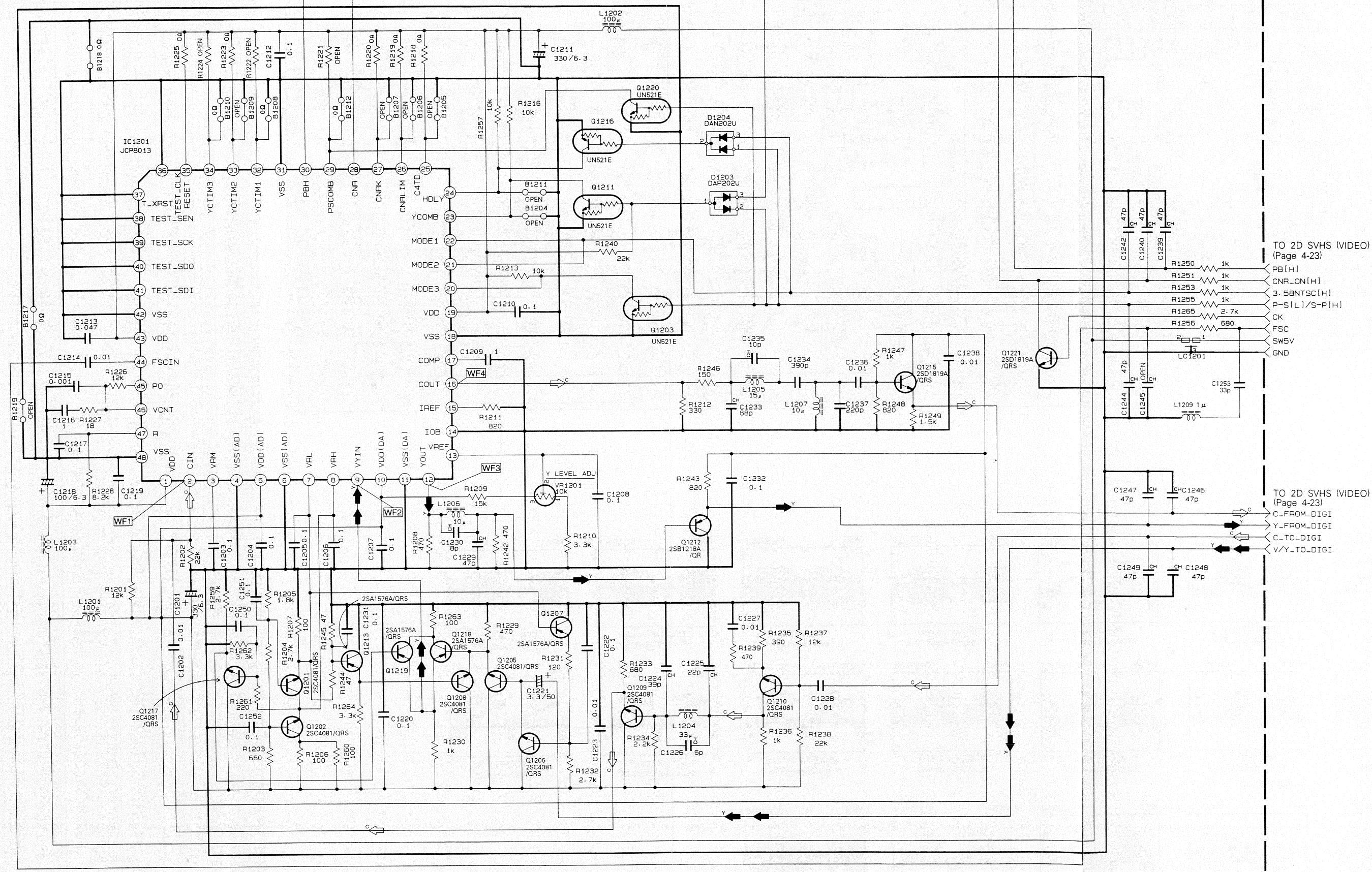


4.10 2D SVHS (VIDEO) SCHEMATIC DIAGRAM



4.11 2D SVHS (2D Y/C) SCHEMATIC DIAGRAM

05 2D SVHS[2D Y/C]

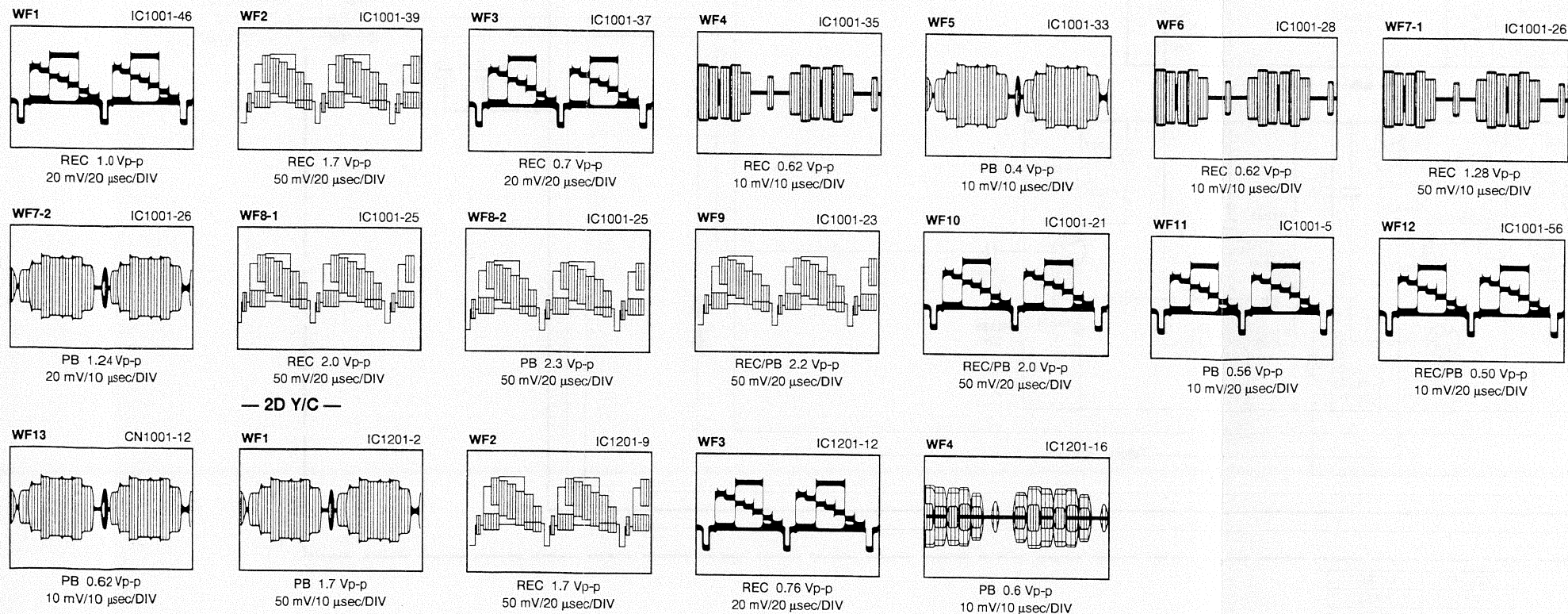


NOTE : For 2D SVHS (2D Y/C) waveforms, please refer to page 4-27, 4-28.
But the waveform point "WF1-WF4" are the shield case inside, therefore the measurement is impossible.
In this case, please refer to the waveforms of the 2D SVHS(VIDEO) as indicated in the following chart.

2D Y/C	VIDEO
WF1	WF13
WF2	WF2
WF3	WF3
WF4	WF5

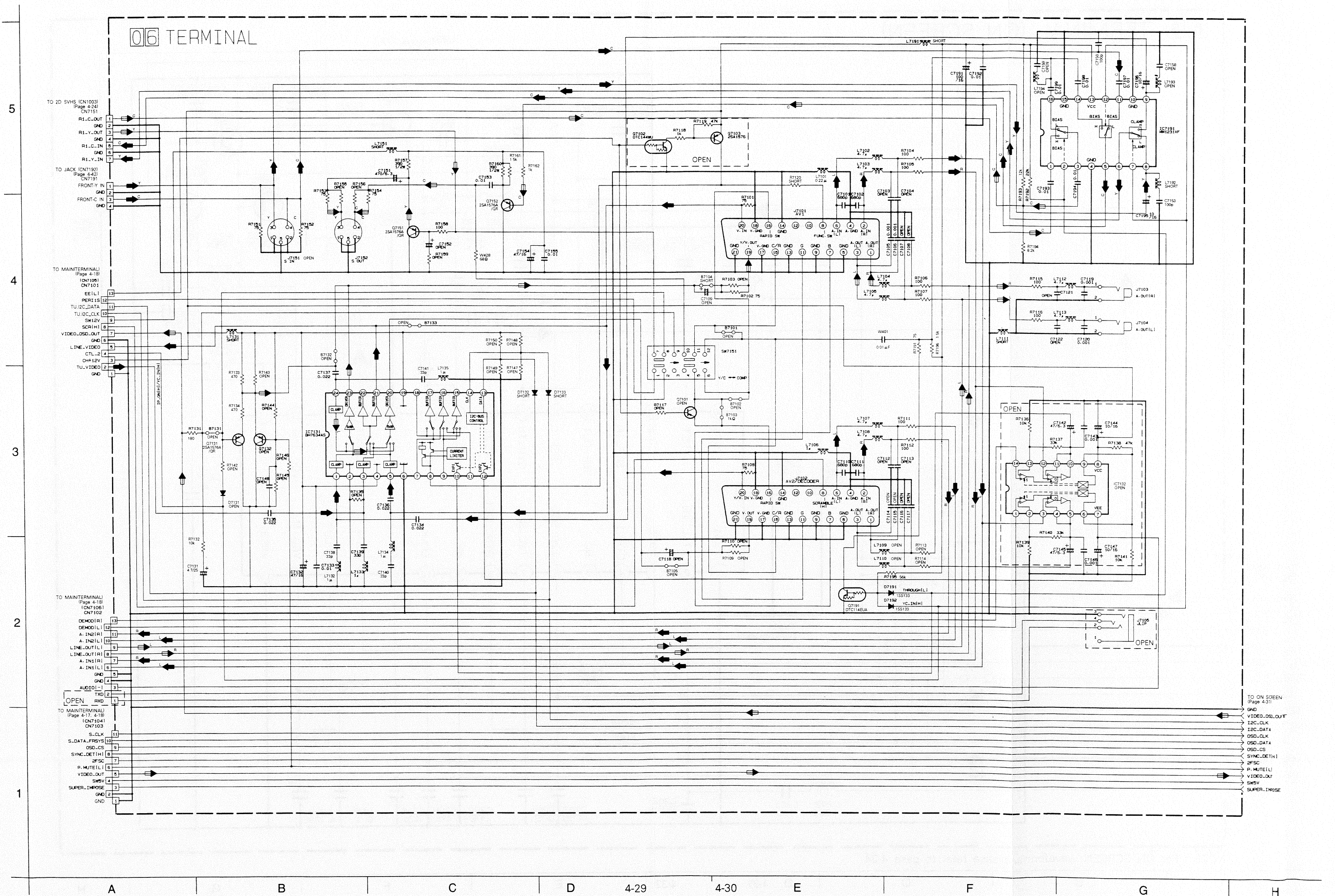
A B C D 4-25 4-26 E F G H

— VIDEO —



COMPONENT PARTS LOCATION GUIDE <2D SVHS>														
REF.NO. LOCATION				REF.NO. LOCATION				REF.NO. LOCATION						
CAPACITOR				C1231	B	C	2C	R1014	B	C	C	13B		
C1001	A	D	10B	C1232	B	C	4B	R1015	B	C	C	13C		
C1002	A	D	11B	C1233	B	C	5B	R1016	B	C	C	13C		
C1003	A	D	11B	C1234	B	C	5B	R1017	B	C	C	13B		
C1005	A	D	11B	C1235	B	C	5C	R1018	B	C	C	12B		
C1006	A	B	C	C1236	B	C	5B	R1019	B	C	C	12C		
C1007	B	B	C	C1237	B	C	5B	R1020	B	C	C	12B		
C1008	B	B	C	C1238	B	C	5B	R1021	B	C	C	12C		
C1009	A	A	D	C1239	B	C	6D	R1023	B	C	C	7B		
C1010	A	B	C	C1240	B	C	6C	R1025	B	C	C	8D		
C1011	B	B	C	C1242	B	C	6D	R1026	B	C	C	7D		
C1012	B	B	C	C1244	B	C	6C	R1027	B	C	C	8D		
C1013	B	B	C	C1245	B	C	6C	R1028	B	C	C	8E		
C1014	A	A	D	C1246	B	C	6C	R1029	B	C	C	8D		
C1015	A	A	D	C1247	B	C	6D	R1030	B	C	C	8E		
C1016	A	A	D	C1248	B	C	6D	R1031	B	C	C	8D		
C1017	A	B	C	C1249	B	C	6C	R1032	B	C	C	7D		
C1018	B	B	C	C1250	B	C	2C	R1035	B	C	C	9B		
C1019	B	B	C	C1251	B	C	2B	R1037	B	C	C	7B		
C1020	B	B	C	C1252	B	C	2B	R1038	B	C	C	10A		
C1021	B	B	C	C1253	B	C	6C	R1039	B	C	C	11B		
C1022	A	A	D	CONNECTOR				R1045	B	C	C	13A		
C1023	A	A	D	CN1001	A	D	8A	R1046	B	C	C	13A		
C1024	A	B	C	CN1002	A	D	11A	R1047	B	C	C	12B		
C1026	B	B	C	CN1003	A	D	12E	R1048	B	C	C	13B		
C1027	B	B	C	CN1004	A	D	7E	R1049	B	C	C	10B		
C1028	A	A	D	CN1005	A	D	11E	R1052	B	C	C	11C		
C1029	A	A	D	DIODE				R1053	B	C	C	8C		
C1030	A	A	D	D1002	A	B	8B	R1054	B	C	C	8D		
C1031	A	A	D	D1003	B	C	8B	R1055	B	C	C	12B		
C1032	A	A	D	D1006	A	B	7C	R1056	B	C	C	12B		
C1033	A	A	D	D1203	B	C	5C	R1058	B	C	C	7D		
C1034	A	A	D	D1204	B	C	5D	R1059	B	C	C	13B		
C1035	A	A	D	IC				R1060	B	C	C	14E		
C1036	A	A	D	IC1001	B	C	10C	R1063	B	C	C	8D		
C1037	A	A	D	IC1002	B	C	12C	R1064	B	C	C	7B		
C1038	A	A	D	IC1006	B	C	7C	R1065	B	C	C	7B		
C1039	A	A	D	IC1007	B	C	13B	R1066	B	C	C	7B		
C1040	B	B	C	IC1201	B	C	4D	R1067	B	C	C	8B		
C1041	B	B	C	COIL				R1068	B	C	C	7A		
C1042	B	B	C	L1001	A	D	11B	R1069	B	C	C	8B		
C1043	B	B	C	L1004	A	D	12D	R1201	B	C	C	2D		
C1044	B	B	C	L1006	A	D	14C	R1202	B	C	C	2B		
C1045	B	B	C	L1008	A	D	8B	R1203	B	C	C	2D		
C1046	B	B	C	L1011	A	D	10E	R1204	B	C	C	2B		
C1047	B	B	C	L1012	A	D	9C	R1205	B	C	C	2C		
C1048	B	B	C	L1013	A	D	9B	R1206	B	C	C	2B		
C1049	B	B	C	L1014	A	D	9B	R1207	B	C	C	2C		
C1050	B	B	C	L1015	A	D	10B	R1208	B	C	C	3C		
C1051	B	B	C	L1016	A	D	12D	R1209	B	C	C	4B		
C1052	B	B	C	L1201	A	D	1B	R1210	B	C	C	4B		
C1053	B	B	C	L1202	A	D	1D	R1211	B	C	C	4C		
C1054	B	B	C	L1203	A	D	2D	R1212	B	C	C	5C		
C1055	B	B	C	L1204	A	D	1C	R1213	B	C	C	4C		
C1056	B	B	C	L1205	A	D	5B	R1216	B	C	C	5D		
C1057	B	B	C	L1206	A	D	4C	R1218	B	C	C	5D		
C1058	B	B	C	L1207	A	D	5B	R1219	B	C	C	5E		
C1059	B	B	C	L1209	A	D	6C	R1220	B	C	C	4E		
C1060	B	B	C	TRANSISTOR				R1221	B	C	C	4E		
C1061	B	B	C	Q1001	B	C	12D	R1222	B	C	C	3E		
C1062	B	B	C	Q1004	B	C	7B	R1223	B	C	C	3E		
C1063	B	B	C	Q1005	B	C	8B	R1226	B	C	C	2E		
C1064	B	B	C	Q1006	B	C	8D	R1227	B	C	C	2D		
C1065	B	B	C	Q1007	B	C	8E	R1228	B	C	C	2D		
C1066	B	B	C	Q1012	B	C	8B	R1229	B	C	C	3B		
C1067	B	B	C	Q1014	B	C	7B	R1230	B	C	C	3B		
C1068	B	B	C	Q1015	B	C	7B	R1231	B	C	C	3B		
C1069	B	B	C	Q1016	B	C	11A	R1232	B	C	C	3B		
C1070	B	B	C	Q1201	B	C	2C	R1233	B	C	C	1D		
C1071	B	B	C	Q1202	B	C	2C	R1235	B	C	C	1C		
C1072	B	B	C	Q1203	B	C	5C	R1236	B	C	C	1B		
C1073	B	B	C	Q1205	B	C	3B	R1237	B	C	C	1B		
C1074	B	B	C	Q1206	B	C	3B	R1238	B	C	C	1B		
C1075	B	B	C	Q1207	B	C	2C	R1239	B	C	C	1B		
C1076	B	B	C	Q1208	B	C	3B	R1240	B	C	C	5C		
C1077	B	B	C	Q1209	B	C	1D	R1242	B	C	C	4B		
C1078	B	B	C	Q1210	B	C	1C	R1243	B	C	C	2C		
C1079	B	B	C	Q1211	B	C	5D	R1244	B	C	C	2B		
C1080	B	B	C	Q1212	B	C	4B	R1245	B	C	C	5B		
C1081	B	B	C	Q1213	B	C	2B	R1246	B	C	C	5B		
C1082	B	B	C	Q1215	B	C	5B	R1247	B	C	C	5B		
C1083	B	B	C	Q1216	B	C	5D	R1248	B	C	C	5B		
C1084	B	B	C	Q1217	B	C	2B	R1249	B	C	C	6D		
C1085	B	B	C	Q1218	B	C	3B	R1250	B	C	C	5B		
C1086	B	B	C	Q1219	B	C	3C	R1251	B	C	C	6C		
C1087	B	B	C	Q1220	B	C	5D	R1252	B	C	C	6C		
C1088	B	B	C	Q1221	B	C	6B	R1253	B	C	C	6C		
C1089	B	B	C	RESISTOR				R1255	B	C	C	5D		
C1090	B	B	C	R1002	B	C	11B	R1257	B	C	C	3C		
C1091	B	B	C	R1003	B	C	11D	R1260	B	C	C	2B		
C1092	B	B	C	R1004	B	C	11D	R1261	B	C	C	2C		
C1093	B	B	C	R1005	B	C	9D	R1262	B	C	C	3C		
C1094	B	B	C	R1006	B	C	9E	R1263	B	C	C	2B		
C1095	B	B	C	R1007	B	C	10D	R1265	B	C	C	6B		
C1096	B	B	C	R1009	B	C	9D	OTHER						
C1097	B	B	C	R1010	B	C	14C	TP1001	A	D	D	8E		
C1098	B	B	C	R1011	B	C	13B	VR1001	A	D	D	9D		
C1099	B	B	C	R1012	B	C	14B	VR1002	A	D	D	14E		
C1100	B	B	C	R1013	B	C	13B	VR1201	A	D	D	4C		
C1101	B	B	C					LC1201	A	D	D	6B		

4.13 TERMINAL SCHEMATIC DIAGRAM



06 TERMINAL (ON SCREEN)

5

4

3

2

1

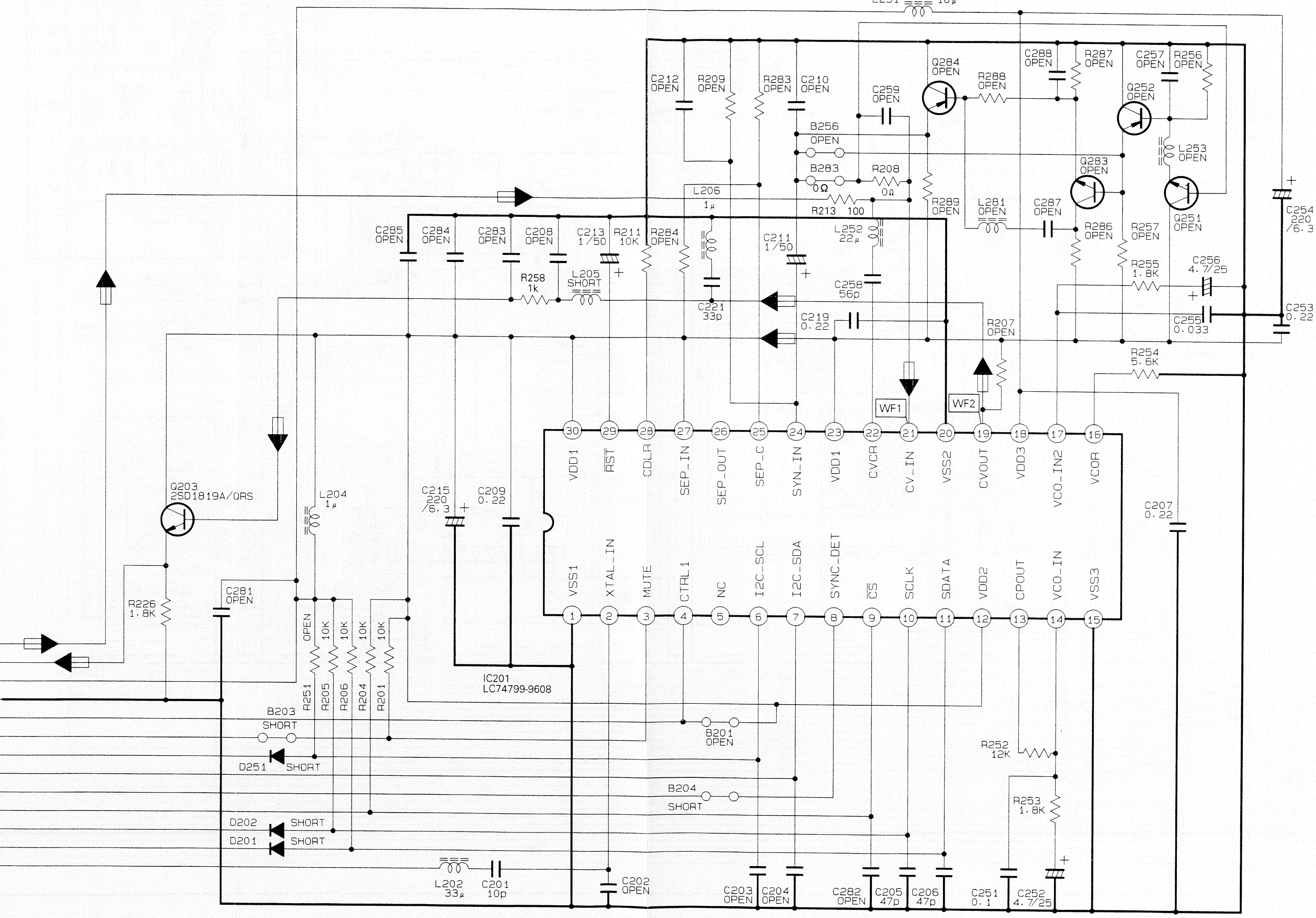
14

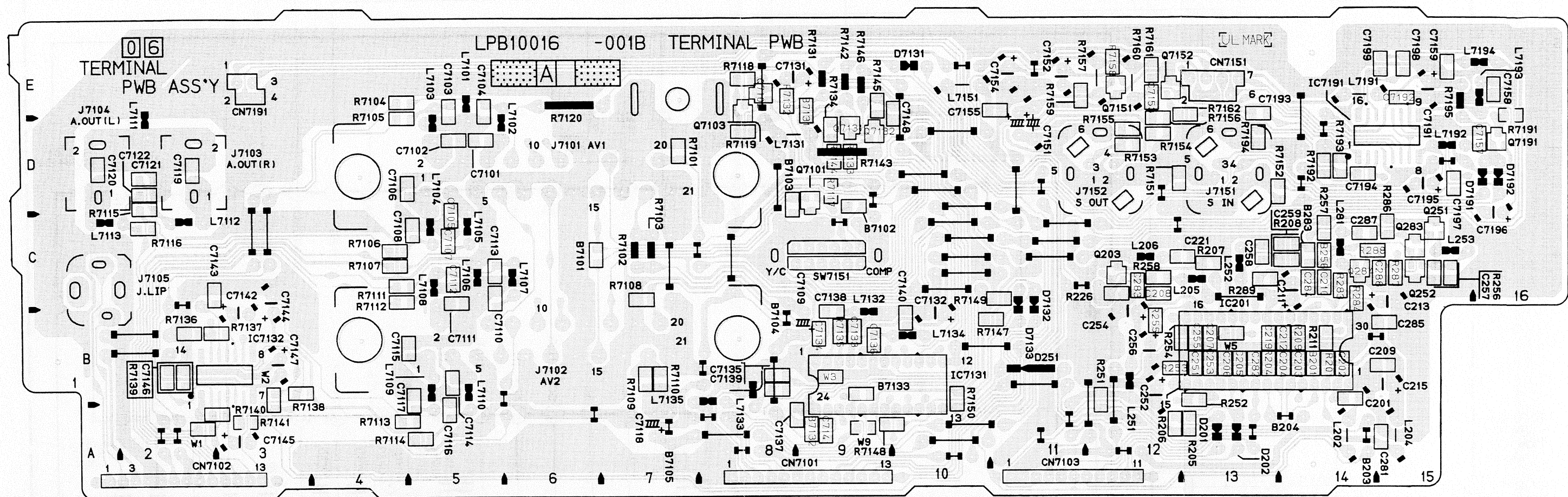
TO TERMINAL
(Page 4-30)

VIDEO_OUT
VIDEO_OSD_OUT
SW5V
GND
SUPER_IMPOSE
P. MUTE[L]
I2C_CLK
I2C_DATA
SYNC_DET[H]
OSD_CS
OSD_CLK
OSD_DATA
2FSC

NOTE : For ON SCREEN waveforms, please refer to pase 4-34.

A B C D 4-31 E F G H

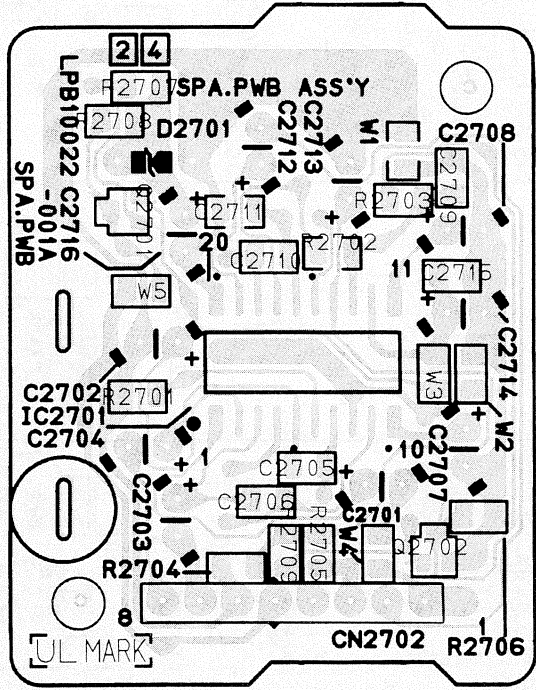


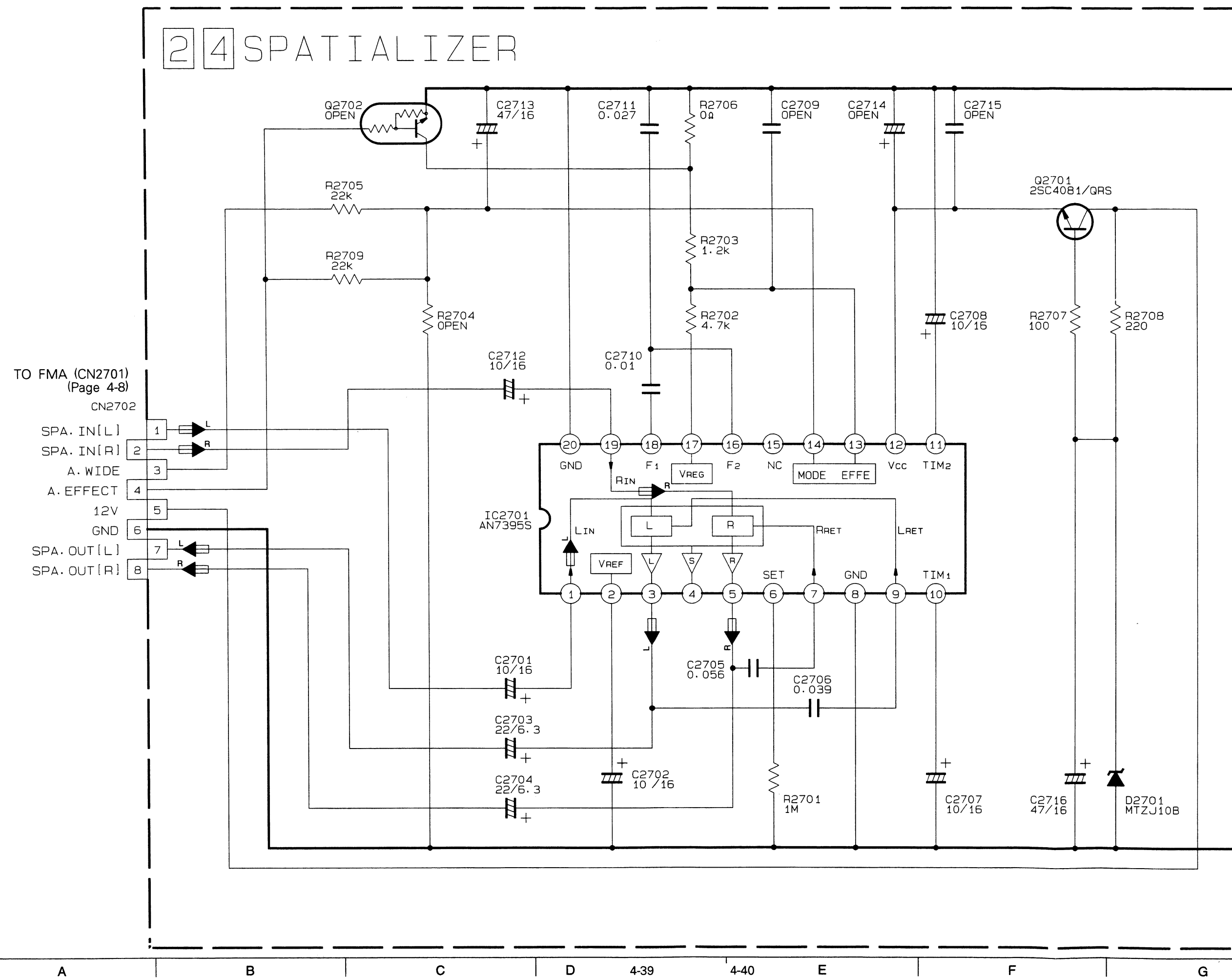


COMPONENT PARTS LOCATION GUIDE <TERMINAL>

REF.NO.		LOCATION		REF.NO.		LOCATION		REF.NO.		LOCATION		REF.NO.		LOCATION		REF.NO.		LOCATION			
CAPACITOR																					
C201	B	C	14B	C7104	B	C	5E	C7151	A	D	11E	IC7131	A	D	9B	L7133	A	D	8A		
C202	B	C	14B	C7105	B	C	5C	C7152	A	D	11E	IC7132	B	C	3B	L7134	A	D	10B		
C203	B	C	14B	C7106	B	C	5D	C7153	A	B	C	12E	IC7191	B	C	15D	L7135	A	D	8B	
C204	B	C	14B	C7107	B	C	5C	C7154	A	B	C	11E	JACK				L7151	A	D	10E	
C205	B	C	13B	C7108	B	C	5C	C7155	B	B	C	11E	J7101	A	D	6D	L7191	A	D	15E	
C206	B	C	13B	C7109	B	A	D	9B	C7157	B	B	C	16D	J7102	A	D	6B	L7192	A	D	15D
C207	B	C	13B	C7110	B	A	D	5C	C7158	B	B	C	16E	J7103	A	D	2D	L7193	A	D	16E
C208	B	C	12C	C7111	B	A	D	5C	C7159	B	B	C	15E	J7104	A	D	1D	L7194	A	D	16E
C209	B	C	15B	C7112	B	A	D	5C	C7191	A	D	15E	J7105	A	D	1C	TRANSISTOR				
C210	B	C	14C	C7113	B	A	D	5C	C7192	B	B	C	15E	J7151	A	D	13D	Q203	B	C	12C
C211	A	A	D	C7114	B	A	D	5B	C7193	B	B	C	13E	J7152	A	D	12D	Q251	B	C	15C
C212	B	C	14B	C7115	B	A	D	5B	C7194	B	B	C	14D	COIL				Q252	B	C	15C
C213	A	A	D	C7116	B	A	D	5A	C7195	A	D	15D	L202	A	D	14A	Q283	B	C	15C	
C215	A	A	D	C7117	B	B	C	5B	C7196	A	D	16C	L204	A	D	15A	Q284	B	C	14C	
C219	B	B	C	C7118	B	A	D	7A	C7197	B	B	C	15D	L205	A	D	13C	Q7101	B	C	9D
C221	B	B	C	C7119	B	B	C	2D	C7198	B	B	C	15E	L206	A	D	12C	Q7102	B	C	8E
C251	B	B	C	C7120	B	A	D	1D	C7199	B	B	C	15E	L251	A	D	12B	Q7103	B	C	8E
C252	A	A	D	C7121	B	C	2D	CONNECTOR				L252	A	D	13C	Q7131	B	C	9D		
C253	B	A	C	C7122	B	C	2D	CN7101	A	D	8A	L253	A	D	15C	Q7132	B	C	9D		
C254	A	A	D	C7131	A	A	D	9E	CN7102	A	D	1A	L281	A	D	14C	Q7151	B	C	12E	
C255	B	A	C	C7132	B	A	B	10B	CN7103	A	D	11A	L7101	A	D	5E	Q7152	B	C	12E	
C256	B	A	C	C7133	B	A	B	9B	CN7151	A	D	13E	L7102	A	D	6D	Q7191	B	C	16D	
C257	B	A	C	C7134	B	A	B	9B	CN7191	A	D	3E	L7103	A	D	5D	RESISTOR				
C258	B	B	C	C7135	B	A	B	8B	DIODE				L7104	A	D	5D	R201	B	C	14B	
C259	B	B	C	C7136	B	A	B	9B	D201	A	D	13A	L7105	A	D	5D	R204	B	C	13B	
C281	B	B	C	C7137	B	A	B	9A	D202	A	D	13A	L7106	A	D	5C	R205	B	C	13A	
C282	B	B	C	C7138	B	A	B	9B	D251	A	D	11B	L7107	A	D	6C	R206	B	C	12A	
C283	B	B	C	C7139	B	A	B	10B	D7131	A	D	10E	L7108	A	D	5C	R207	B	C	13C	
C284	B	B	C	C7140	B	A	B	9B	D7132	A	D	11C	L7109	A	D	5B	R208	B	C	14C	
C285	B	B	C	C7141	B	A	B	3C	D7133	A	D	11C	L7110	A	D	5B	R209	B	C	14B	
C287	B	B	C	C7142	B	A	D	3B	D7191	A	D	16D	L7111	A	D	2D	R211	B	C	14B	
C288	B	B	C	C7143	B	A	B	3C	D7192	A	D	16D	L7112	A	D	2C	R226	B	C	12C	
C7101	B	C	5D	C7144	B	A	D	3A	IC				L7113	A	D	2C	R251	B	C	12B	
C7102	B	C	5D	C7145	B	A	D	2B	IC201	A	D	14B	L7131	A	D	9D	R252	B	C	13B	
C7103	B	C	5E	C7146	B	A	D	3B	SWITCH				L7132	A	D	9B	R253	B	C	12B	
				C7147	B	A	D	3E													
				C7148	B	A	D	10E													







A

B

C

D

4-39

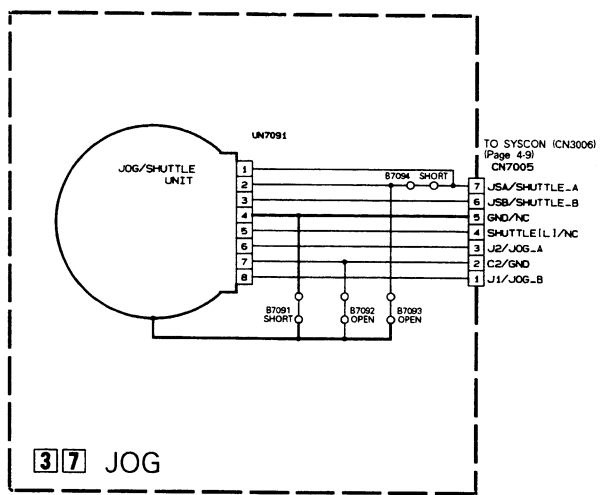
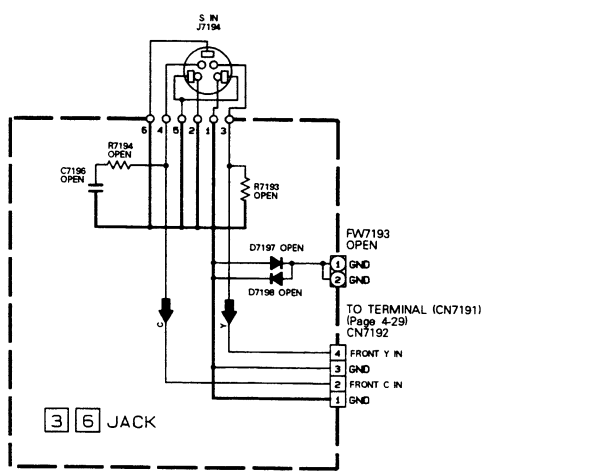
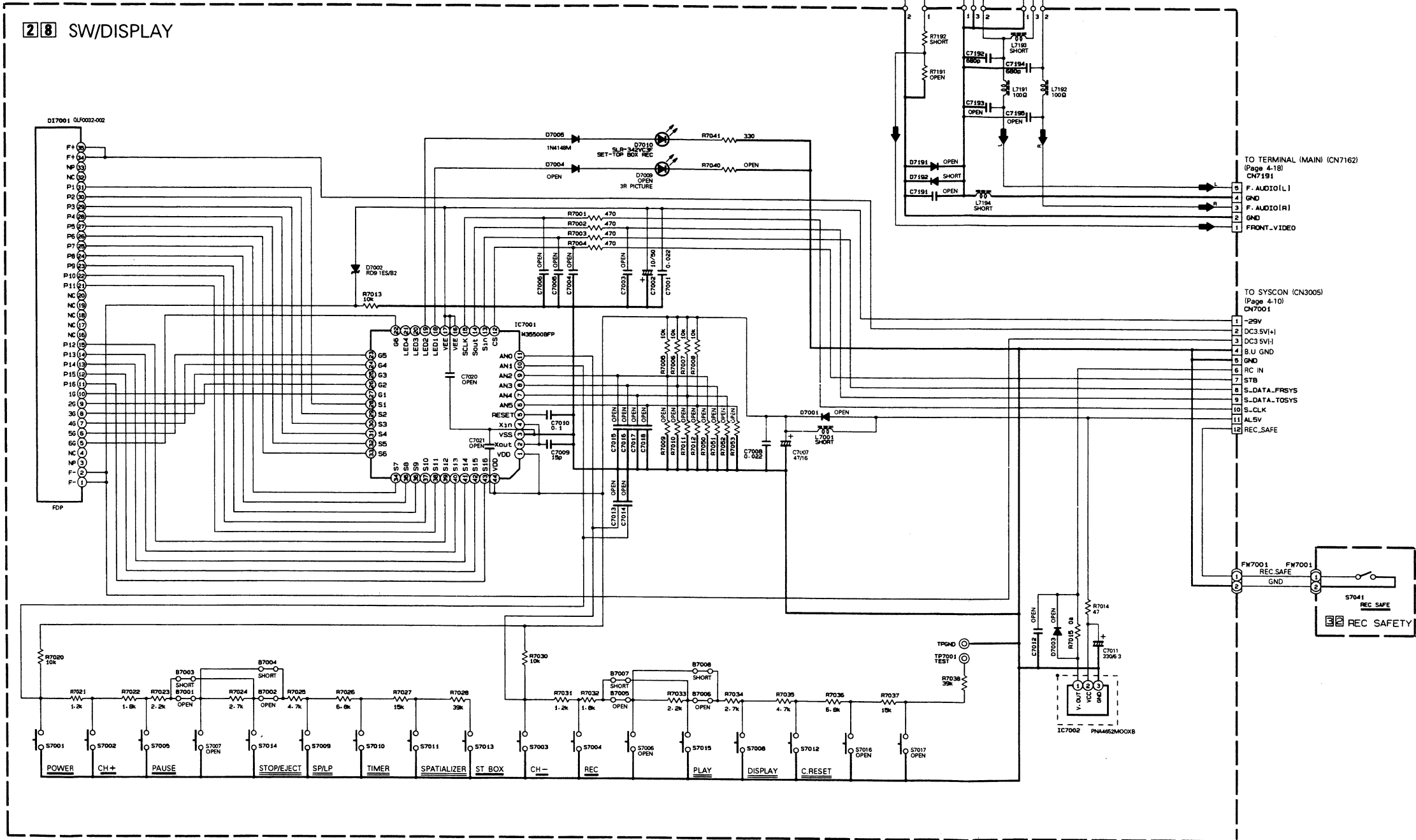
4-40

E

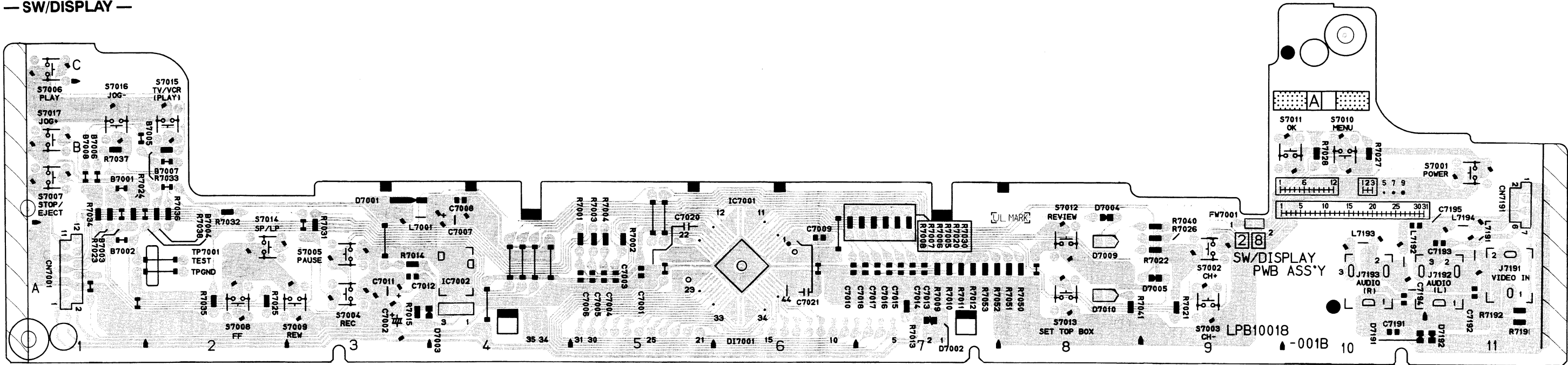
F

G

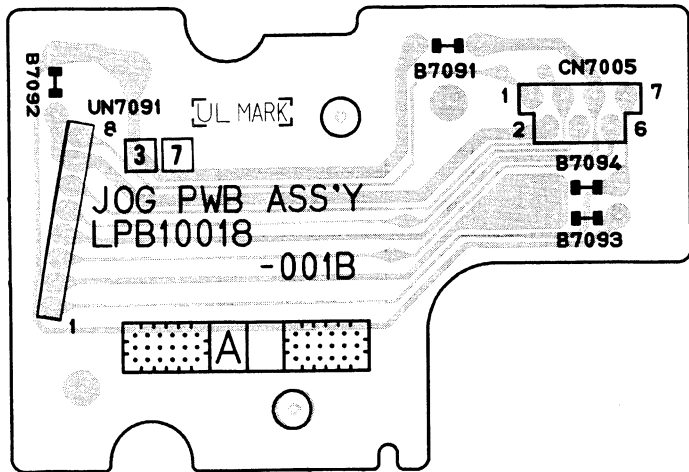
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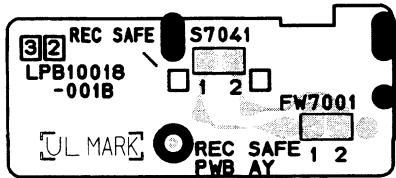
— SW/DISPLAY —



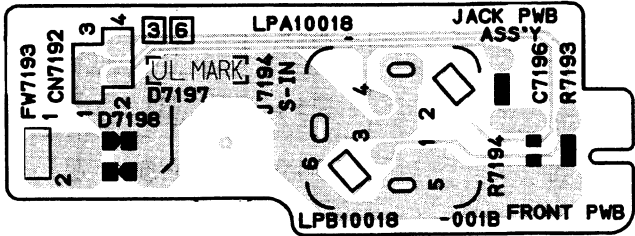
— JOG —



— REC SAFETY —



— JACK —

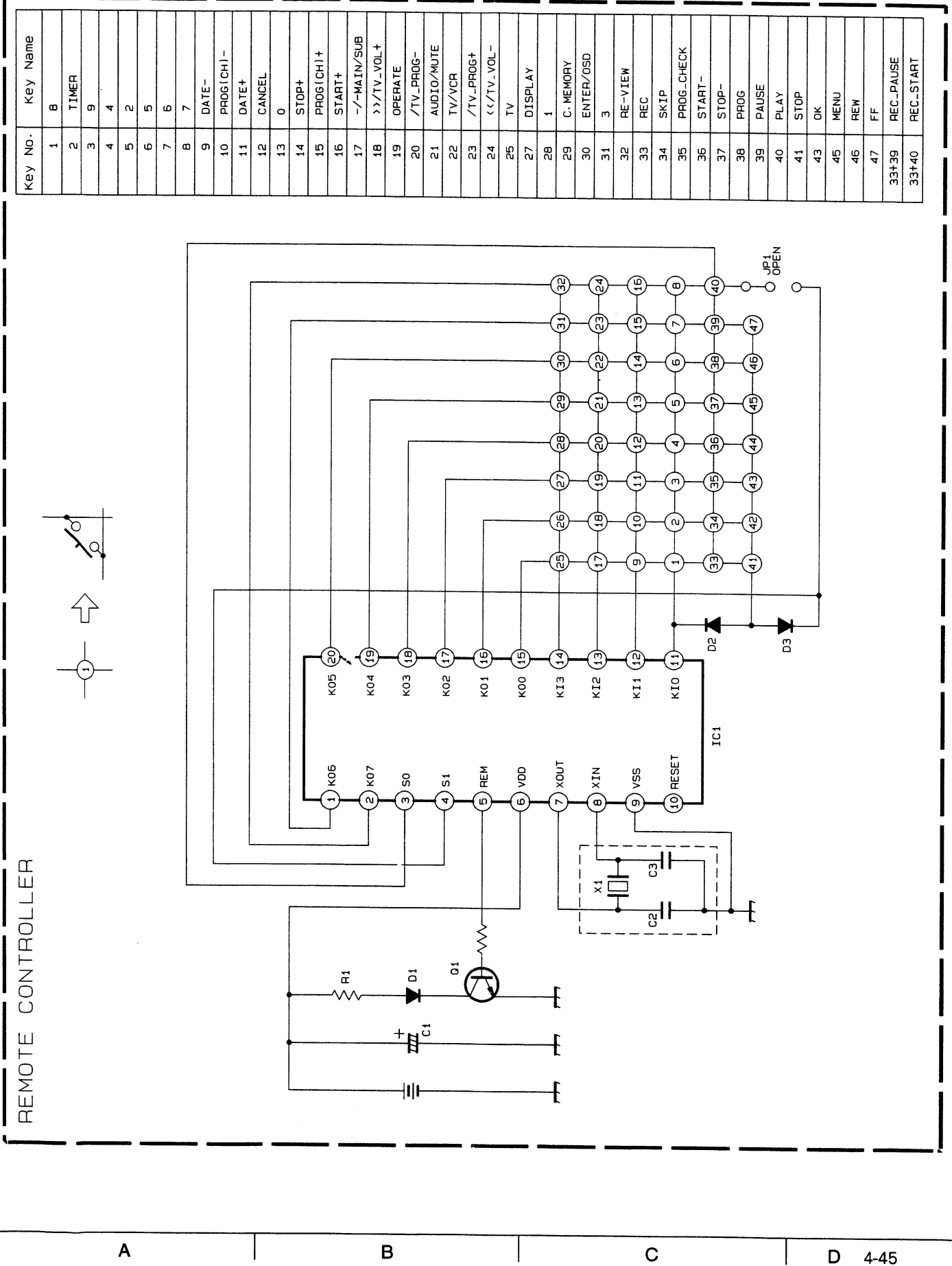


COMPONENT PARTS LOCATION GUIDE <SW/DISPLAY>

REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION
CAPACITOR		C7192	A D 11A	JACK		R7010	A D 7A	R7038	A D 2A	S7012	A D 8A
C7001	A D 5A	C7193	A D 11A	J7191	A D 11A	R7011	A D 7A	R7040	A D 9A	S7013	A D 8A
C7002	A D 3A	C7194	A D 10A	J7192	A D 11A	R7012	A D 7A	R7041	A D 8A	S7014	A D 2A
C7003	A D 5A	C7195	A D 11A	J7193	A D 10A	R7013	A D 7A	R7050	A D 8A	S7015	A D 2B
C7004	A D 5A	CONNECTOR		COIL		R7014	A D 3A	R7051	A D 8A	S7016	A D 1B
C7005	A D 5A	CN7001	A D 1A	L7001	A D 4B	R7015	A D 3A	R7052	A D 7A	S7017	A D 1B
C7006	A D 5A	CN7191	A D 11B	L7191	A D 11A	R7020	A D 7B	R7053	A D 7A	TEST POINT	
C7007	A D 4B	DIODE		L7192	A D 10A	R7021	A D 9A	R7191	A D 11A	TP7001	A D 1A
C7008	A D 4B	D7001	A D 3B	L7193	A D 10A	R7022	A D 9A	R7192	A D 11A	TPGND	A D 1A
C7009	A D 6A	D7002	A D 7A	L7194	A D 11A	R7023	A D 1A	SWITCH		OTHERS	
C7010	A D 6A	D7003	A D 4A	RESISTOR		R7024	A D 1B	S7001	A D 11B	DI7001	A D 6A
C7011	A D 3A	D7004	A D 8B	R7001	A D 5A	R7025	A D 2A	S7002	A D 9A	FW7001	A D 9B
C7012	A D 3A	D7005	A D 9A	R7002	A D 5A	R7026	A D 9A	S7003	A D 9A		
C7013	A D 7A	D7006	A D 8A	R7003	A D 5A	R7027	A D 10B	S7004	A D 3A		
C7014	A D 7A	D7007	A D 8A	R7004	A D 5A	R7030	A D 7B	S7005	A D 3A		
C7015	A D 7A	D7010	A D 8A	R7005	A D 7A	R7031	A D 3B	S7006	A D 1C		
C7016	A D 7A	D7191	A D 10A	R7006	A D 7A	R7032	A D 2B	S7007	A D 1B		
C7017	A D 7A	D7192	A D 11A	R7007	A D 7A	R7033	A D 2B	S7008	A D 2A		
C7018	A D 7A	IC		R7008	A D 7A	R7034	A D 1B	S7009	A D 3A		
C7020	A D 5A	IC7001	B C 6A	R7009	A D 7A	R7035	A D 2A	S7010	A D 10B		
C7021	A D 6A	IC7002	A D 4A			R7036	A D 2A	S7011	A D 10B		
C7191	A D 10A					R7037	A D 1B				

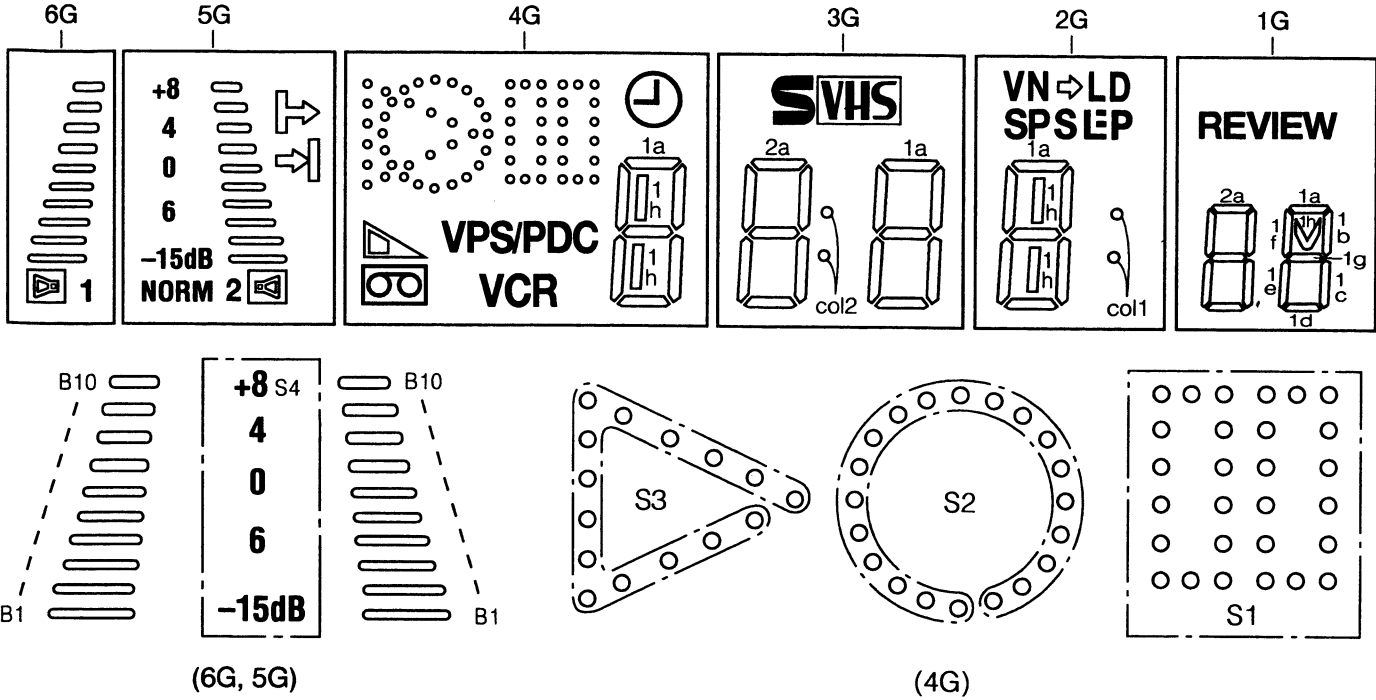
4.22 REMOTE CONTROL SCHEMATIC DIAGRAM

NOTES:
1. All parts shown in this schematic are critical for safety.
2. This schematic is only for reference.
Avoid replacing individual parts.
Replace the entire unit only.



4.23 FDP GRID ASSIGNMENT AND ANODE CONNECTION

GRID ASSIGNMENT



ANODE CONNECTION

	6G	5G	4G	3G	2G	1G
P 1	—	→	S2	1a	1a	1a
P 2	—	←	S1	1b	1b	1b
P 3	—	S4	S3	1f	1f	1f
P 4	—	NORM	VPS/PDC	1g	1g	1g
P 5	1	2	⌚	1c	1c	1c
P 6	⌚	⌚	⌚	1e	1e	1e
P 7	B10	B10	⌚	1d	1d	1d
P 8	B9	B9	VCR	col2	1h	1h
P 9	B8	B8	1a	2a	col1	2a
P10	B7	B7	1b	2b	→	2b
P11	B6	B6	1f	2f	VN	2f
P12	B5	B5	1g	2g	LD	2g
P13	B4	B4	1c	2c	SP	2c
P14	B3	B3	1e	2e	S _(SEP)	2e
P15	B2	B2	1d	2d	= _(SEP)	2d
P16	B1	B1	1h	SVHS	LP _(SEP)	REVIEW

4.24 VOLTAGE CHARTS

<VIDEO/N.AUDIO>

MODE PIN NO.	REC	PLAY
IC1		
1	2.5	2.5
2	2.4	2.4
3	0	0
4	2.2	2.2
5	0	0
6	0.3	0.5
7	2.4	2.4
8	2.4	2.4
9	2.4	2.4
10	2.4	2.4
11	2.4	2.4
12	5.0	5.0
13	1.8	1.6
14	1.8	1.5
15	2.6	1.9
16	1.5	0.7
17	2.0	2.0
18	2.2	2.2
19	3.0	3.0
20	2.7	2.7
21	2.3	2.3
22	2.3	2.3
23	3.0	3.0
24	2.0	2.0
25	1.4	1.4
26	2.0	2.0
27	0	0
28	5.0	5.0
29	1.1	1.1
30	3.2	3.2
31	2.7	2.7
32	0	0
33	0	0
34	0	0
35	3.0	3.0
36	5.0	5.0
37	0	0
38	5.0	5.0
39	3.1	3.1
40	5.0	5.0
41	5.0	5.0
42	1.9	1.9
43	5.0	5.0
44	2.5	2.5
45	0	0
46	2.0	2.0
47	0	0
48	0	0
49	0	0
50	0.4	0.4
51	1.3	1.3
52	1.3	1.3
53	3.0	3.0
54	1.9	1.9
55	2.0	2.0
56	2.2	2.8
57	0	0
58	3.0	3.0
59	3.4	3.4
60	2.1	2.1
61	4.9	4.9

MODE PIN NO.	REC	PLAY
62	4.6	4.6
63	4.6	4.6
64	0	0
65	1.7	1.7
66	5.0	5.0
67	4.9	4.9
68	0	0
69	2.7	2.7
70	2.8	2.8
71	2.1	2.1
72	2.2	2.1
73	1.6	1.6
74	2.7	1.0
75	2.1	2.1
76	2.5	2.5
77	4.7	4.6
78	2.7	2.7
79	4.3	2.1
80	0	0
81	-	-
82	1.2	1.2
83	2.5	2.5
84	0	0
85	0	0
86	2.4	2.4
87	2.1	2.1
88	2.1	2.1
89	2.4	2.4
90	5.0	5.0
91	0	0
92	0	0
93	0	0
94	0	0
95	2.8	2.8
96	5.0	5.0
97	0	0
98	5.0	5.0
99	0.6	0.6
100	2.5	2.5
IC2		
1	2.8	2.8
2	3.9	3.9
3	2.8	2.7
4	4.9	0
5	2.8	2.8
6	5.0	5.0
7	1.9	2.0
8	0	0
Q1		
E	4.2	4.2
C	0	0
B	3.6	3.6
Q6		
E	2.7	2.7
C	0	0
B	2.0	2.0
Q13		
E	-	-
C	-	-
B	-	-
Q14		
E	-	-

MODE PIN NO.	REC	PLAY
C	-	-
B	-	-
Q15		
E	-	-
C	-	-
B	-	-
Q16		
E	-	-
C	-	-
B	-	-
Q18		
E	3.2	0
C	0	1.9
B	0	0.1
Q38		
E	1.3	1.7
C	5.0	5.0
B	0.7	2.4
Q47		
E	4.9	4.9
C	2.2	2.1
B	3.0	2.9
Q48		
E	2.2	2.1
C	0	0
B	0.8	0.7
Q102		
E	-	-
C	-	-
B	-	-
Q152		
E	5.0	2.7
C	0	0
B	4.5	2.1
Q2001		
E	-11.9	0
C	0	0
B	-18.4	0.7
Q2002		
E	-11.9	0
C	0	0
B	-18.1	0.6
Q2003		
E	5.0	5.0
C	-18.2	5.0
B	4.9	0
Q2051		
E	0	0
C	8.0	0.3
B	0.4	0.2
Q2052		
E	11.4	11.5
C	11.2	3.5
B	10.7	11.4
Q2053		
E	0	0
C	0	3.5
B	4.9	0
Q2054		
E	11.2	3.5
C	11.0	0.2
B	10.4	3.5

MODE PIN NO.	REC	PLAY
Q2055		
E	-	-
C	-	-
B	-	-
CN1		
1	0	0
2	0	0
3	0	0
4	0	0
5	2.4	2.2
6	2.4	2.2
7	2.1	2.2
8	2.1	2.2
9	4.2	0
10	4.1	0
11	4.1	0
CN101		
1	-	-
2	-	-
3	-	-
4	-	-
5	-	-
6	-	-
7	-	-
8	-	-
9	-	-
10	-	-
11	0	0
12	0	0
13	5.2	5.1
14	5.2	5.1
15	5.2	5.1
16	0	0
17	0.4	0.4
18	0	0
19	4.2	4.2
20	0	0
21	0.5	0.4
22	2.0	2.0
23	0	0
24	0	0
25	0	0
26	0	0
27	0	0
28	0	0
29	0	0.1
30	0	0
CN102		
1	1.4	1.0
2	0	0
3	0	0
4	0	0
5	0	0
6	0	0
7	1.5	1.0
8	2.3	2.0
9	0.7	1.7
10	4.2	4.1
11	2.3	2.3
12	3.2	0.1
13	0	0
14	0	0

<FMA>

MODE PIN NO.	REC	PLAY
IC2201		
1	1.9	2.0
2	0	0
3	2.5	2.5
4	0	0
5	0	0
6	2.5	2.5
7	0	0
8	2.5	2.5
9	1.4	1.4
10	0	0
11	2.5	2.4
12	2.5	2.5
13	2.5	2.4
14	2.0	2.0
15	2.5	0
16	4.6	4.6
17	4.6	4.6
18	0	2.6
19	0	0
20	0	1.6
21	2.0	2.0
22	0	0
23	0	0

MODE PIN NO.	REC	PLAY
15	0	2.1
16	0	0
17	4.6	4.6
18	4.6	4.6
19	5.1	5.1
20	5.2	5.2
21	0	2.4
22	0	0
23	1.7	1.8
24	0	0
25	0	0
26	2.8	2.8
27	2.2	2.1
28	0	0
29	0	0
30	0	0
CN2001		
1	0	0.1
2	0	0
3	0	0
4	0	0
5	0	0
6	1.7	2.5
7	1.9	2.5
CN2002		
1	0	0
2	0.1	0
IC2251		
1	0	-
2	4.2	0
3	0.5	0.6
4	0	0
5	0.5	0.6
6	4.2	0
7	4.1	0
8	2.5	2.5
9	0.6	0
10	4.9	5.0
11	3.0	3.9
12	0	0
13	1.8	1.0
14	1.9	1.8
15	0.2	0
16	4.4	0.8
Q2251		
E	4.4	0
C	4.4	0.8
B	0.5	0.3
Q2253		
E	2.5	0
C	0.5	0
B	0	4.6
Q2711		
E	0	0
C	0	0
B	-1.8	-2.0
Q2712		
E	0	0
C	0	0
B	-1.8	-2.0
Q2713		
E	5.7	5.8
C	-1.9	-2.0
B	5.7	5.8

<SYSCON>

MODE PIN NO.	REC	PLAY
IC3001		
1	1.1	1.2
2	0	0
3	5.0	5.0
4	5.0	5.0
5	0	0
6	0	0
7	1.5	1.5
8	1.2	1.3
9	0	0
10	-	-
11	-	-
12	5.1	5.1
13	0	0
14	0	0
15	0	4.9
16	5.0	5.0
17	0	0
18	0	0
19	4.2	4.2
20	0	0
21	0	0
22	5.1	5.0
23	0	0
24	0	0
25	0	0
26	0	0
27	0	0
28	-	0.7
29	-	-
30	4.3	-
31	0.4	0.3
32	0.3	0.3
33	0.9	0.9
34	0.2	0.3
35	0.3	0.3
36	0.3	0.2

MODE PIN NO.	REC	PLAY
37	0.2	0.2
38	0.2	0.2
39	5.0	0
40	5.0	0
41	5.0	5.0
42	5.1	5.1
43	0	0
44	5.0	5.0
45	0	0
46	0	0
47	0	0
48	0	0
49	0	0
50	4.9	4.9
51	0	0
52	5.1	0
53	0	0
54	0	0
55	0	0
56	-	-
57	1.1	1.0
58	5.0	5.0
59	4.7	4.7
60	5.1	5.1
61	4.5	4.6
62	0	0
63	5.1	5.1
64	0	0
65	0	0
66	0	0
67	-	0
68	0	0
69	3.0	3.5
70	-	-
71	-	-
72	5.1	5.1
73	5.0	5.1
74	5.0	5.0
75	5.0	5.1
76	5.0	5.0
77	4.5	4.5
78	1.7	1.7
79	4.0	2.5
80	0	0
IC3002		
1	0	0
2	12.2	12.2
3	1.8	2.0
4	0	0
5	0	0
6	12.1	12.2
7	1.9	2.0
8	12.2	12.1
9	0	0
IC3003		
1	5.1	5.1
2	5.1	5.1
3	0	0
IC3004		
1	0	0
2	0	0
3	0	0

MODE PIN NO.	REC	PLAY
4	0	0
5	-	-
6	-	-
7	0	0
8	5.0	5.0
IC3301		
1	0.2	1.5
2	0	0.6
3	5.0	5.0
4	5.0	5.1
5	0	0
6	0	0
7	0	0
8	5.0	5.0
9	0	0
10	-	-
11	-	-
12	-	-
13	0	0
14	5.0	5.0
15	5.0	5.1
16	0	0
17	0	0
18	0	0
19	4.8	4.9
20	4.9	5.0
21	4.6	4.6
22	-	-
23	-	-
24	-	-
25	4.6	4.6
26	0	0
27	0	0
28	0	0
29	-	-
30	0.8	0.7
31	0	0
32	5.0	5.1
33	0	0
34	0.2	0.2
35	0.2	0.2
36	0.3	0.3
37	0.3	0.3
38	0.2	0.2
39	0.8	0.8
40	0.3	0.3
41	0.2	0.5
42	4.3	4.3
43	5.0	0

MODE PIN NO.	REC	PLAY
7	4.6	4.9
8	4.6	0
9	0	0
10	-20.9	-20.8
11	-17.2	-17.1
12	-29.7	-29.6
CN3006		
1	0.5	0.5
2	5.0	5.0
3	0	0
4	0	0
5	0	0
6	0	0
7	5.1	5.1

<SERVO>		
MODE PIN NO.	REC	PLAY
IC4001		
1	0	0
2	0.4	0.2
3	2.3	2.3
4	0	0
5	3.1	0
6	5.0	-
7	1.5	1.5
8	2.9	2.9
9	5.0	5.0
10	2.5	2.5
11	2.5	2.5
12	2.5	2.5
13	1.7	2.5
14	2.8	2.5
15	2.5	2.5
16	0	0
17	2.4	2.4
18	0	0
19	0.5	0.5
20	0	-
21	-	-
22	1.6	1.6
23	5.0	5.0
24	4.7	4.7
CN4001		
1	12.1	12.2
2	0	0
3	1.5	1.5
4	1.5	1.5
Q5101		
S	0	0
D	302.1	302.4
G	3.5	3.4
Q5102		
E	0	0
C	3.5	3.4
B	0.1	0.1
Q5301		
E	20.7	20.7
C	11.4	11.4

MODE PIN NO.	REC	PLAY
B	20.6	20.6
Q5302		
E	0	0
C	20.2	20.9
B	0	0
Q5304		
E	0	0
C	0	0
B	4.6	4.5
Q5305		
E	0	0
C	11.0	11.0
B	0.5	0.6
Q5306		
E	5.2	5.2
C	6.0	6.0
B	5.8	5.8
Q5315		
E	5.2	5.1
C	5.9	5.9
B	5.8	5.8
Q5316		
E	0	0
C	5.8	5.8
B	0.6	0.6
Q5317		
E	5.2	5.2
C	5.9	5.9
B	5.8	5.8
Q5318		
E	0	0
C	5.8	5.8
B	0.6	0.5
Q5319		
E	11.3	11.3
C	12.2	12.2
B	12.0	12.0
Q5320		
E	12.2	12.2
C	12.2	12.2
B	0	0
Q5322		
E	11.6	11.6
C	12.2	12.2
B	12.2	12.2
Q5323		
E	11.5	11.5
C	12.2	12.2
B	12.0	12.1
Q5451		
E	11.4	11.4
C	8.5	8.5
B	11.4	11.4
Q5452		
E	0	0
C	11.4	11.4
B	0.4	0.4

<TUNER>

MODE PIN NO.	REC	PLAY
IC6080		
1	1.2	1.2
2	2.5	2.4
3	4.4	4.5
4	0	0
5	7.5	7.6
6	7.6	7.5
7	7.6	7.5
8	9.1	9.1
Q6001		
E	9.1	9.1
C	11.4	11.4
B	9.8	9.8
Q6030		
E	1.7	1.7
C	0	0
B	1.0	1.0
Q6031		
E	0	0
C	1.0	1.0
B	4.1	4.1

<TERMINAL MAIN>

MODE PIN NO.	REC	PLAY
CN7104		
1	0	0
2	0	0
3	0	0
4	5.1	5.1
5	2.3	2.2
6	4.2	4.2
7	2.7	2.7
8	5.0	5.1
9	1.0	1.0
10	1.6	1.6
11	4.7	4.7
CN7105		
1	0	0
2	1.8	1.8
3	11.5	11.5
4	0	0
5	1.1	1.1
6	0	0
7	0	0
8	0	0
9	11.3	11.3
10	-	-
11	-	-
12	0	0
13	0	5.1
CN7106		
1	-	-
2	-	-
3	-10.9	-10.9
4	0	0
5	0	0
6	0	0
7	0	0

MODE PIN NO.	REC	PLAY
8	0	0
9	0	0
10	0	0
11	0	0
12	0	0
13	0	0
CN7162		
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
6	-	-
7	-	-

<2D SVHS(VIDEO/2D Y/C)>

MODE PIN NO.	REC	PLAY
IC1001		
1	2.9	2.9
2	0	5.0
3	2.2	2.2
4	1.8	1.8
5	2.8	2.8
6	2.8	2.8
7	2.3	2.3
8	3.2	3.2
9	2.3	2.3
10	2.8	2.8
11	2.8	2.8
12	2.3	2.
13	4.6	4.6
14	4.6	4.6
15	2.6	2.6
16	3.1	3.1
17	0	0
18	3.2	2.1
19	1.7	1.7
20	0	0
21	2.3	2.3
22	2.7	2.7
23	0	0
24	0	0
25	2.1	2.1
26	2.1	2.1
27	2.7	2.7
28	2.8	2.8
29	2.8	2.8
30	0	0
31	2.8	2.8
32	0	0
33	2.8	2.8
34	5.1	5.1
35	2.8	2.8
36	1.8	1.8
37	3.1	3.1
38	2.9	2.9
39	2.5	2.5
40	2.7	2.7

MODE PIN NO.	REC	PLAY
41	2.9	2.9
42	2.8	2.8
43	3.0	3.0
44	2.3	2.3
45	0	0
46	2.8	2.8
47	1.9	1.2
48	2.8	2.8
49	5.1	5.1
50	2.9	2.9
51	5.1	5.1
52	2.7	2.7
53	2.2	2.2
54	2.6	3.6
55	0	0
56	2.3	2.3
IC1002		
1	2.0	2.0
2	0.1	5.1
3	3.5	3.5
4	3.5	3.5
5	4.9	4.9
6	2.3	2.3
7	2.0	2.2
8	5.1	5.1
9	1.4	1.5
10	3.0	2.9
11	3.0	2.9
12	3.0	2.8
13	0	0
14	2.9	2.9
15	2.9	2.9
16	2.1	2.0
17	2.1	2.0
18	2.1	2.1
IC1006		
1	0	0
2	0.1	5.1
3	0	0
4	2.9	2.9
5	0	0
6	4.3	4.3
7	0	4.9
8	1.5	1.5
9	4.2	4.2
10	5.1	5.1
11	2.9	2.9
12	1.6	1.6
13	0.8	0.8
14	3.4	3.4
15	3.5	3.5
16	1.3	1.3
17	4.2	4.2
18	0.5	0.6
19	5.0	5.0
20	0.7	0.7
IC1007		
1	2.4	3.4
2	2.2	2.2
3	0	2.2
4	0	0
5	1.7	1.6

MODE PIN NO.	REC	PLAY
6	1.6	2.0
7	0.9	0.6
8	5.1	5.1
CN1003		
1	2.1	2.1
2	0	0
3	2.3	2.3
4	0	0
5	5.7	5.7
6	0	0
7	5.7	5.7

<DEMODO>

MODE PIN NO.	REC	PLAY
IC6701		
1	1.9	1.9
2	2.5	2.5
3	0	0
4	0.1	0
5	5.0	5.0
6	5.0	5.0
7	2.9	3.1
8	-	-
9	0	0
10	0	0
11	0	0
12	1.9	1.9
13	1.8	1.8
14	1.8	1.8
15	1.7	1.8
16	5.0	5.0
17	0	0
18	1.9	1.9
19	0	0
20	4.7	4.7
21	0	0
22	0	0
23	0	0
24	0	0
25	0	0
26	0	0
27	0	0
28	0	0
29	0	0
30	3.6	3.6
31	3.6	3.6
32	0	0
33	8.4	8.3
34	7.4	7.4
35	0	0
36	3.7	3.7
37	0	0
38	0	0
39	0	0
40	0	0
41	0	0
42	0	0
43	2.6	2.6
44	3.6	3.7
45	0	0

MODE PIN NO.	REC	PLAY
46	5.0	5.0
47	1.4	1.5
48	1.5	1.5
49	0	0
50	0	0
51	2.3	2.3
52	2.3	2.3
Q6701		
E	8.4	8.4
C	11.4	11.4
B	8.9	8.9
Q6702		
E	2.9	2.9
C	8.4	8.4
B	3.6	3.6
Q6704		
E	0	0
C	0	0
B	3.0	3.0
Q6705		
E	0	0
C	0	0
B	3.0	3.0
CN6701		
1	-	-
2	-	-
3	0	0
4	5.0	5.0
5	11.4	11.4
6	0	0
7	0	0
8	0	0
9	0	0
10	1.7	1.7
11	4.1	4.1

<TERMINAL>

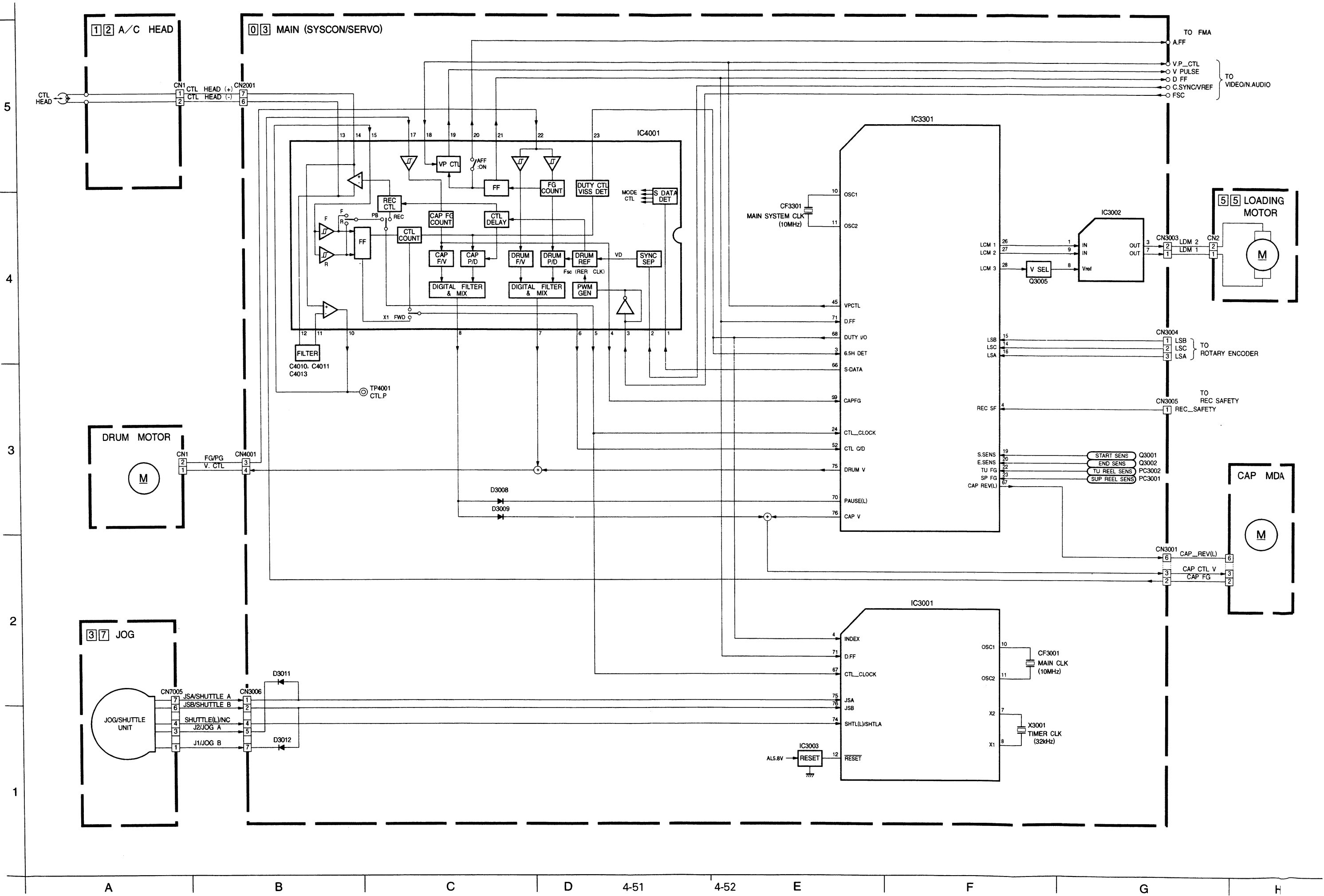
MODE PIN NO.	REC	PLAY
IC7131		
1	1.6	1.6
2	0	0
3	1.6	1.6
4	11.5	11.5
5	2.0	2.0
6	0	0
7	5.0	5.0
8	11.4	11.4
9	4.9	5.0
10	5.4	5.4
11	5.1	5.1
12	0	0
13	-	-
14	-	-
15	5.7	5.7
16	5.1	0
17	5.7	5.7
18	4.9	5.0
19	11.5	11.4
20	2.6	2.6
21	1.4	0

MODE PIN NO.	REC	PLAY
22	1.4	0
23	2.5	2.5
24	2.0	2.0
Q7131		
E	-	-
C	-	-
B	-	-

<TERMINAL(ON SCREEN)>

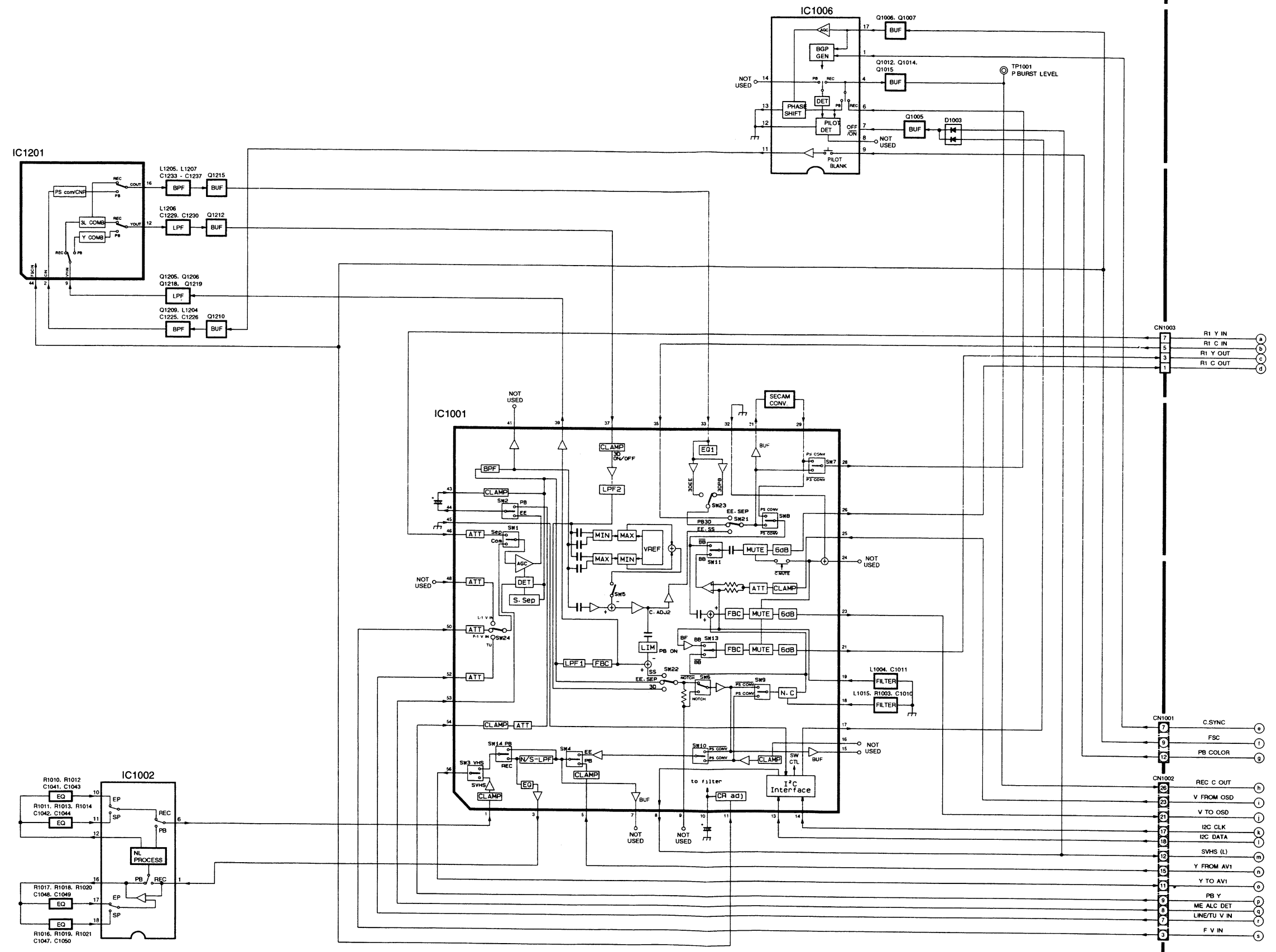
MODE PIN NO.	REC	PLAY
IC201		
1	0	0
2	2.6	2.6
3	4.2	4.2
4	0	0
5	2.0	2.0
6	-	-
7	-	-
8	5.0	5.0
9	-	-
10	4.6	4.6
11	-	-
12	5.0	5.0
13	2.9	2.9
14	2.8	2.8
15	0	0
16	1.2	1.2
17	2.5	2.5
18	5.0	5.0
19	2.3	2.3
20	0	0
21	2.3	2.3
22	1.9	1.9
23	5.0	5.0
24	3.0	3.0
25	2.5	2.5
26	5.0	5.0
27	5.0	5.0
28	3.7	3.7
29	5.0	5.0
30	5.0	5.0

4.25 SYSTEM CONTROL/SERVO BLOCK DIAGRAM



4.26 VIDEO BLOCK DIAGRAM

0 5 2D SVHS (VIDEO/2D Y/C)



A B C D 4-53 4-54 E F G H

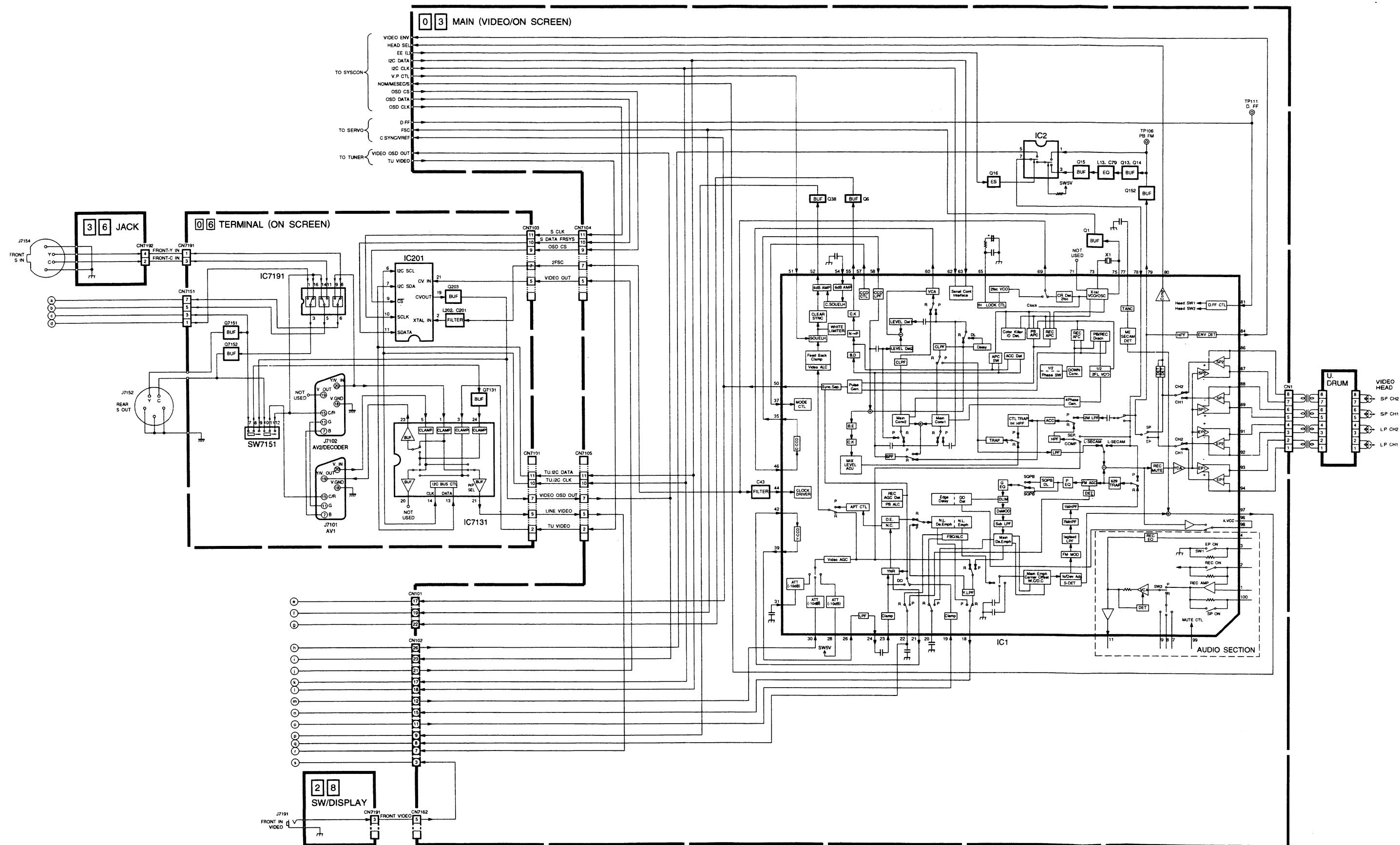
5

4

3

2

1



5



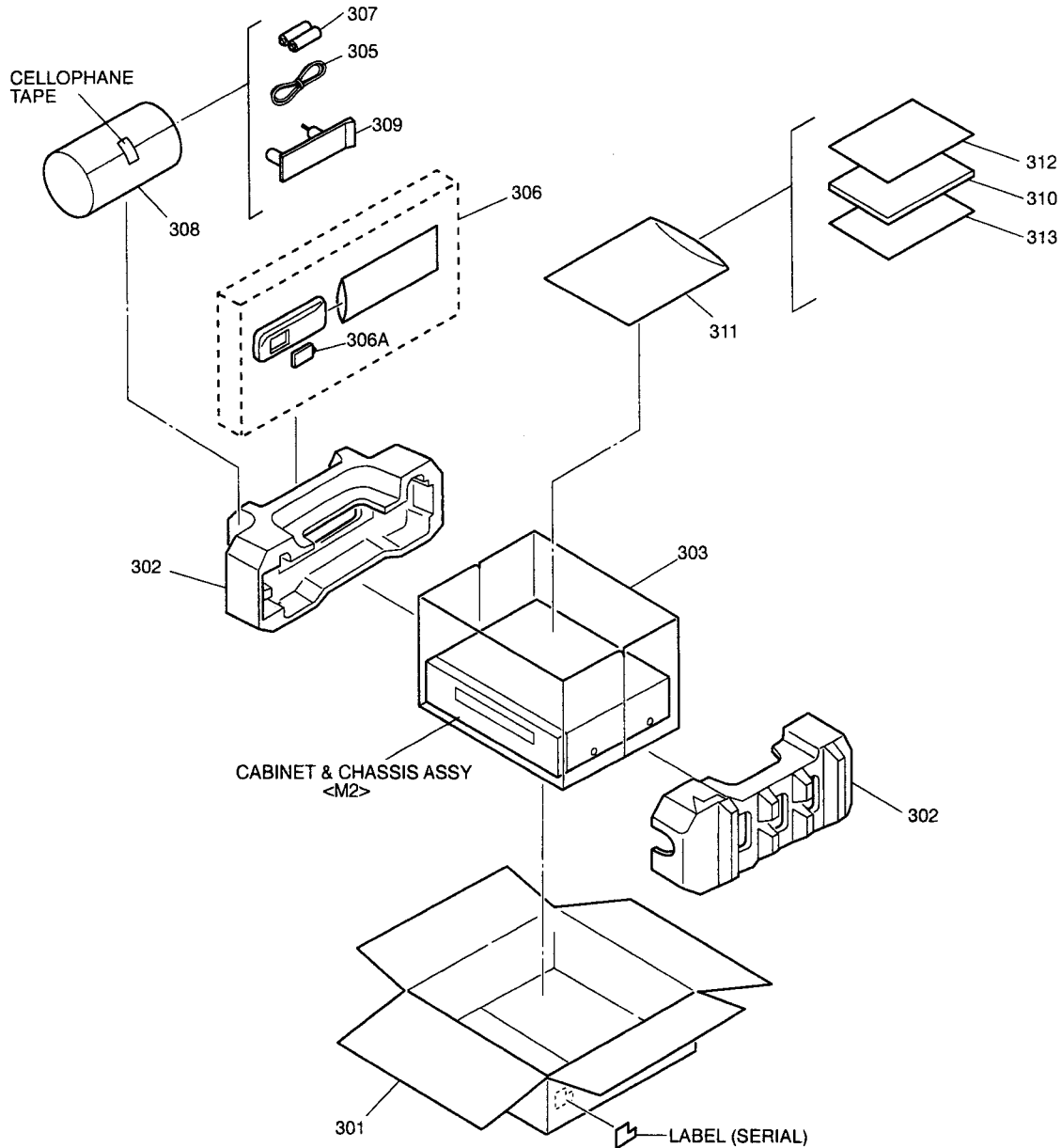
SECTION 5 PARTS LIST

SAFETY PRECAUTION

Parts identified by the $\triangle$ symbol are critical for safety. Replace only with specified part numbers.

5.1 PACKING AND ACCESSORY ASSEMBLY <M1>

The instruction manual to be provided with this product will differ according to the destination.



$\triangle$ REF No. PART No. PART NAME, DESCRIPTION

PACKING AND ACCESSORY ASSEMBLY <M1>

301	LP30423-045A	PACKING CASE
302	LP30424-001D	CUSHION ASSY
303	PQM30021-93	POLY BAG
305	PEAC0300-02	RF CABLE
306	LP20337-004B	REMOTE CONTROLLER

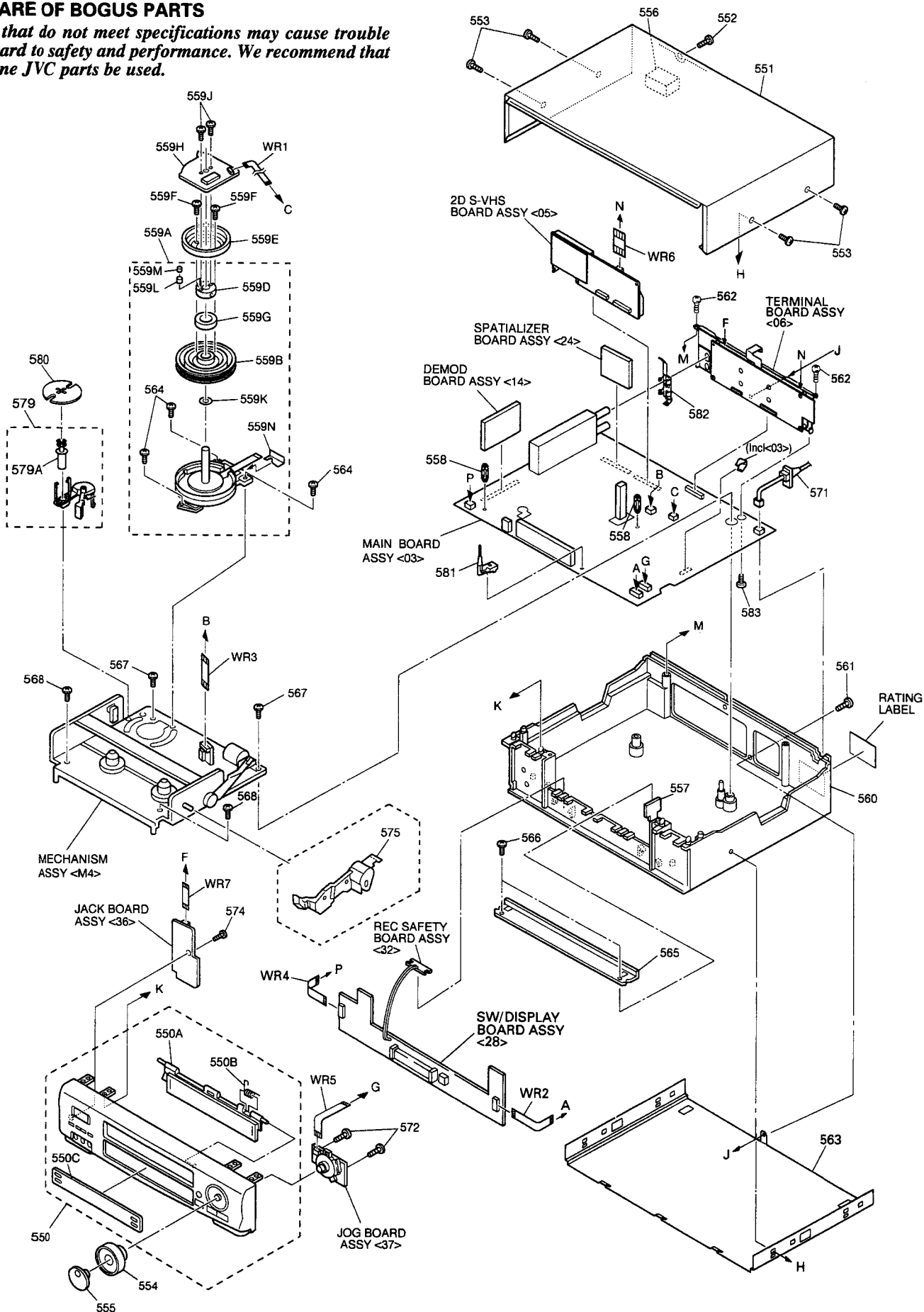
$\triangle$ REF No. PART No. PART NAME, DESCRIPTION

306A	LP40254-002B	COVER(BATTERY)
307	-	BATTERY(R6P TYPE)
308	QPC02202215P	POLY BAG
309	LP30383-003A	CONNECTOR COVER(for front panel connector)
$\triangle$ 310	LPT0053-001B	INST.BOOK(EN)
	QPC02503515P	POLY BAG
312	BT-54008-1	GUARANTEE CARD
313	BT-20066A	E.DISTRI.LIST

5.2 CABINET AND CHASSIS ASSEMBLY <M2>

BEWARE OF BOGUS PARTS

Parts that do not meet specifications may cause trouble in regard to safety and performance. We recommend that genuine JVC parts be used.

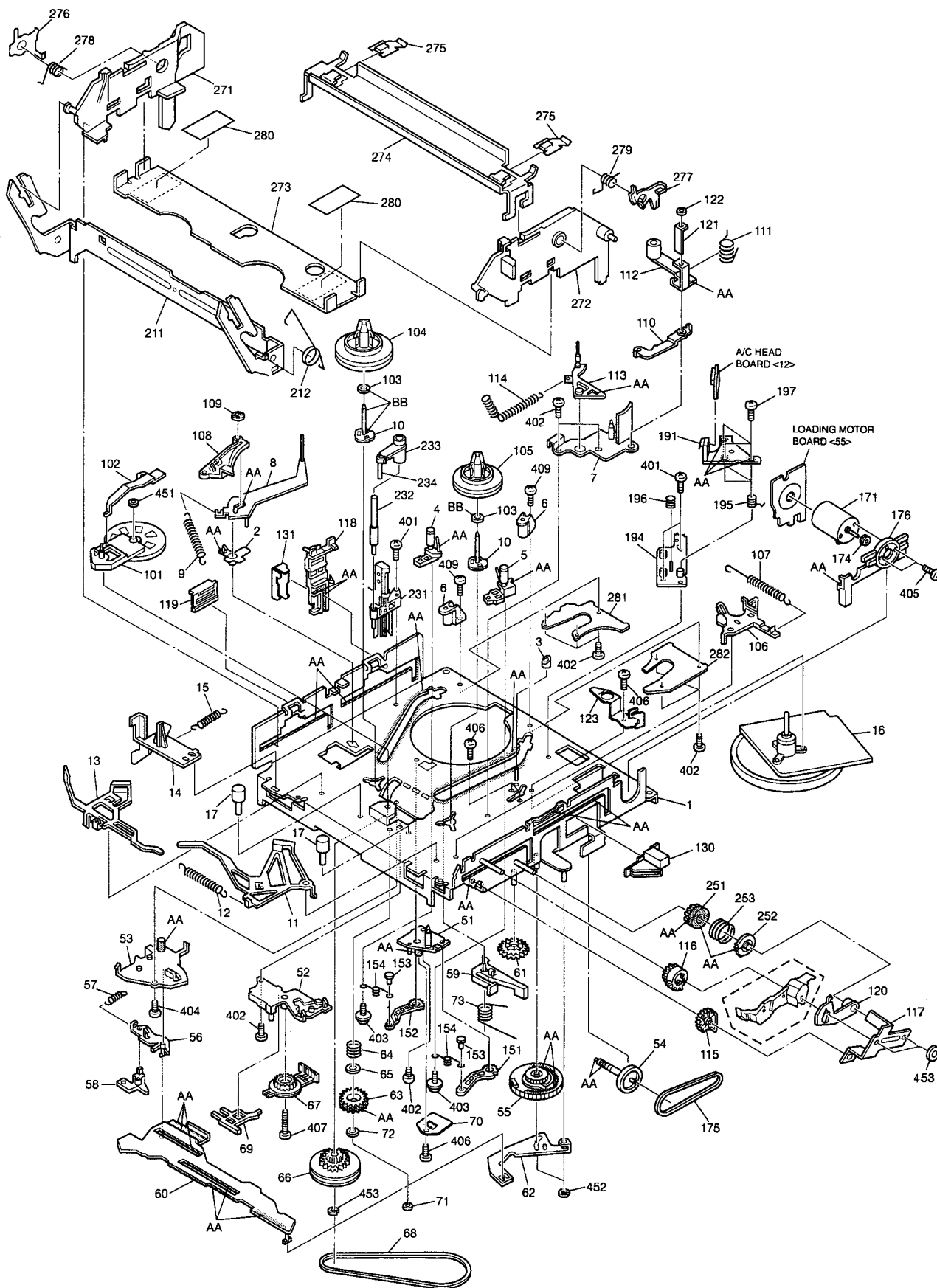


#	△	REF No.	PART No.	PART NAME, DESCRIPTION

CABINET AND CHASSIS ASSEMBLY <M2>				
△	550	LP10125-018D		FRONT PANEL ASSY
	550A	LP20342-007B		CASSETTE DOOR
	550B	PQ46448		TORSION SPRING
	550C	LP20343-019A		DISPLAY WINDOW
△	551	PQ11676-53		TOP COVER
	552	QYTDSF3010M		SCREW,TOP COVER(REAR)
	553	QYTDSF3010R		SCREW,X4 TOP COVER(SIDE)
	554	LP30120-005A		KNOB SHUTTLE
	555	LP30121-005A		KNOB(JOG)
	556	LP30002-051A		SPACER,TOP COVER
	557	LP40441-001A		SPACER(MECHA)
	558	LP40226-001A		PC SUPPORT,X2
	559A	LP20289-004A		DRUM SUB ASSY
	559B	LP20030-008A		UPPER DRUM ASSY
	559D	LP40028-001A		COLLAR ASSY
	559E	PDZ0179		ROTOR ASSY
	559F	QYSPSP3006Z		SCREW,X2
	559G	PDM4439		CAP
	559H	PDZ0181-1-2		STATOR ASSY
	559J	QYSPSP2606Z		SCREW,X2
	559K	PDM4444-19-2		WASHER
	559L	LP40323-001A		CONTACT
	559M	LP30004-005A		COMPRESS.SPRING
	559N	LP40174-001B		FPC PLATE
△	560	LP10116-003C		BOTTOM CHASSIS
	561	QYTDSF3010M		SCREW,TERMINAL
	562	QYTDSF3010Z		SCREW,X2 TERMINAL
△	563	PQ11668-2-9		BOTTOM COVER
	564	QYTPST2608Z		SCREW,X3 DRUM
	565	LP30312-001B		BRACKET(CHASSIS)
	566	QYTDSF3010Z		SCREW,X2 BRACKET(CHASSIS)
	567	QYTDSF4012Z		SCREW,X2 MECHA
	568	QYTDSF3010Z		SCREW,X2 MECHA
△	571	QMP51K0-170		POWER CORD
	572	QYTDSF2608Z		SCREW,X2 JOG BOARD
	574	QYTDSF3010Z		SCREW,S JACK BOARD
	575	LP20324-002B		DOOR OPENER
	579	LP40370-001B		ROLLER ARM ASSY
	579A	PDM4311A-1		ROLLER ASS'Y
	580	PQ45160		INERTIA PLATE
	581	LP40407-001A		KNOB ASSY
	582	PQ21623-1-3		EARTH PLATE(RF)
	583	QYTDSF3008Z		SCREW,X2 TERMINAL
	WR1	QUQ212-0419CG		FFC WIRE,DRUM
	WR2	QUQ112-1214CG		FFC WIRE,DISPLAY
	WR3	WJT0005-002A		E-CARD WIRE,A/C HEAD
	WR4	QUQ212-0514CG		FFC WIRE,DISPLAY
	WR5	QUQ112-0718CG		FFC WIRE,JOG
	WR6	QUQ112-0706CG		FFC WIRE,TERMINAL
	WR7	QUQ212-0446CG		FFC WIRE,S JACK

#	△	REF No.	PART No.	PART NAME, DESCRIPTION
---	---	---------	----------	------------------------

5.3 MECHANISM ASSEMBLY <M4>



Classifi- cation	Part No.	Symbol in drawing
Grease	KYODO-SH-P	AA
Oil	COSMO-HV56	BB

NOTE: The section marked in AA and BB indicate lubrication and greasing areas.

△ REF No. PART No. PART NAME, DESCRIPTION

MECHANISM ASSEMBLY <M4>

1	LP20228-003D	MAIN DECK ASSY
2	LP30232-002A	T.ARM BEARING
3	LP40097-001B	G.POLE CAP
4	LP40101-002A	P.BASE ASSY(S)
5	LP40104-002A	P.BASE ASSY(T)
6	LP30409-002A	UV CATCHER 2,X2
7	LP20234-001C	LID GUIDE
8	LP40108-001A	TENSION ARM ASSY
9	LP30003-010A	TENSION SPRING
10	LP40123-001A	REEL SHAFT,X2
11	LP40111-002B	MAIN BRAKE AY (TAKE-UP)
12	LP30003-002A	TENSION SPRING
13	LP40110-002D	MAIN BRAKE ASSY (SUPPLY)
14	LP30245-001C	REC SAFTY LEVER
15	LP30003-004A	TENSION SPRING
16	QAR0032-003	CAPSTAN MOTOR
17	PQ46302-1-3	ADJUST PIN,X2
51	LP30223-003B	L.A.GEAR SHAFT
52	LP20233-003B	R.ENCODER GUIDE
53	LP30226-003B	CTL.PLATE GUIDE
54	LP40120-001A	WORM GEAR
55	LP30229-001B	CTL.CAM
56	LP30249-003B	T.UP LEVER
57	LP30003-006A	TENSION SPRING
58	LP40119-002A	T.UP HEAD
59	LP40113-001A	C.BRAKE ASSY
60	LP10080-002E	CTL.PLATE
61	LP30237-002A	CASSETTE GEAR
62	LP40107-002A	LINK LEVER ASSY
63	LP40122-001A	DIRECT GEAR
64	LP40224-001C	COMPRESSION SPRING
65	LP30017-002A	SPACER,D.GEAR
66	LP40115-002C	CLUTCH UNIT
67	QSW0554-002	ROTARY ENCODER
68	LP30005-005A	BELT,CAP.MOTOR
69	LP30235-002A	CHANGE LEVER
70	LP40379-001A	CTL BRACKET(1)
71	LP30016-001A	SLIT WASHER
72	LP30017-009A	SPACER,D.GEAR
73	LP40355-002A	TORSION SPRING
101	LP40114-002D	IDLER ARM ASSY
102	LP30236-002A	IDLER LEVER
103	LP30017-004A	SPACER,REEL DISK
104	LP20237-001B	REEL DISK (SUPPLY)
105	LP20238-001B	REEL DISK (TAKE-UP)
106	LP40112-001D	S.BRAKE(T)ASSY
107	LP40357-001B	TENSION SPRING
108	LP40109-002C	T.BRAKE ASSY
109	PQ46302-1-3	ADJUST PIN
110	LP40149-001B	P.LEVER ASSY
111	LP40148-001A	TORSION SPRING
112	LP40105-001A	P.R.ARM ASSY
113	LP40106-001B	GUIDE ARM ASSY
114	LP40134-001B	TENSION SPRING
115	LP30243-001B	DRIVE GEAR
116	LP30242-001A	RELAY GEAR
117	LP40214-001A	C.H.BRACKET
118	LP30244-001D	GUIDE RAIL

△ REF No. PART No. PART NAME, DESCRIPTION

119	LP40118-001A	RAIL CAP
120	LP30339-001A	OPENER GUIDE
121	LP40382-001A	P.R. SHEET
122	LP30016-002A	SLIT WASHER
123	LP30482-001A	P.ROLLER GUIDE
130	LP30493-001A	START SENSOR CAP
131	LP40457-001A	END SENSOR SHEET 2
151	LP40103-002A	L.ARM GEAR(T)
152	LP30224-001A	L.ARM GEAR(S)
153	LP40100-001A	PIN,L.ARM GEAR(S)
	LP40100-001A	PIN,L.ARM GEAR(T)
154	LP40099-001A	TORSION ARM,L.ARM GEAR(S)
	LP40099-001A	TORSION ARM,L.ARM.GEAR(T)
171	QAR0023-001	LOADING MOTOR
174	PQ43546-1-2	MOTOR PULLEY
175	LP30005-003A	BELT,LOADING MOTOR
176	LP30230-001B	MOTOR GUIDE
191	QAH0010-002	AC HEAD
194	LP30228-001A	HEAD BASE
195	LP30004-012A	COMPRES.SPRING X3
196	LP40236-001A	COMPRESSION SPRING
197	LP40213-002B	SPECIAL SCREW,X3
211	LP20240-001B	DRIVE ARM
212	LP40137-001A	TORSION SPRING
231	NAH0001-001	FULL ERASE HEAD
232	LP40098-001B	GUIDE POLE(S)
233	LP30459-001A	T.STUD BASE
234	LP40367-001A	TENSION STUD
251	LP30239-002E	LIMIT GEAR(1)
252	LP30240-002C	LIMIT GEAR(2)
253	LP40136-001D	TORSION SPRING
271	LP10081-001C	SIDE HOLDER(L)
272	LP40403-001B	S.HOLDER(R)ASSY
273	LP30257-001C	CASSETTE HOLDER
274	LP20241-001C	TOP PLATE
275	LP30258-001B	SPRING PLATE,X2
276	LP30255-001F	LOCK LEVER(L)
277	LP30256-001D	LOCK LEVER(R)
278	LP40168-001A	TOR.SPRING(L)
279	LP40218-001B	TOR.SPRING(R)
280	LP30019-006C	PAD,X2
281	LP40275-001A	PLATE(S)
282	LP40276-001A	PLATE(T)
401	QYTDST2608Z	SCREW,FE.HEAD
	QYTDST2608Z	SCREW,X2 HEAD BASE
402	QYTDST2606Z	SCREW,X6 PLATE(S)(T)
	QYTDST2606Z	SCREW,L.A.GEAR
	QYTDST2606Z	SCREW,R.ENCODER GUIDE
	QYTDST2606Z	SCREW,X2 LID GUIDE
403	QYSPSTG2606Z	SCREW,POLE BASE(S)
	QYSPSTG2606Z	SCREW,P.BASE(T)
404	QYTPST2605Z	SCREW,CTL.PLATE GUIDE
405	QYTPSP3003Z	SCREW,X2 LOADING MOTOR
406	QYTDSP2608M	SCREW,CTL BRACKET(1)
	QYTDSP2608M	SCREW,X3 CAP.MOTOR
407	QYTPST2620Z	SCREW,R.ENCODER
409	QYTPST2606Z	SCREW,X2 UV CATCHER
451	LP30016-001A	SLIT WASHER,IDLER ARM
452	PQM30017-24	SLIT WASHER,CTL.CAM
	PQM30017-24	SLIT WASHER,LINK LEVER
453	PQM30017-47	SLIT WASHER,CLUTCH GEAR
	PQM30017-47	SLIT WASHER,X2 C.H.BRACKET

5.4 ELECTRICAL PARTS LIST

#	△ REF No.	PART No.	PART NAME, DESCRIPTION

MAIN BOARD ASSEMBLY <03>			
PW1		LPA10014-52A	MAIN BOARD ASSY
IC1		JCP8016-MSB	IC
IC2		MM1113XF	IC
IC2201		AN3665FB-A	IC
△ IC2251		AN3328S	IC
IC3001		HD6433929TB25F	QFP IC (MCU)
IC3002		TA7291S	IC
IC3003		S-80728AN-DR-X	IC
IC3004		M24C08-BN6	IC
		or AT24C08-10PC	IC
		or X24C08P	IC
		or 24LC08B/P	IC
IC3301		HD6433926TB43F	QFP IC (MCU)
IC4001		BU2885CS	IC
IC6080		BA15218F-XE	IC
Q1		2SA1576A/QR/-X	TRANSISTOR
Q6		2SB1218A/QR/-X	TRANSISTOR
		or 2PA1576/R/-X	TRANSISTOR
		or 2SA1576A/QR/-X	TRANSISTOR
Q13		2SC4081/QRS/-X	TRANSISTOR
Q14		2SC4081/QRS/-X	TRANSISTOR
Q15		2SA1576A/QR/-X	TRANSISTOR
Q16		UN511E	TRANSISTOR
		or DTA144WU	TRANSISTOR
		or RN2309	TRANSISTOR
Q18		UN521E	TRANSISTOR
		or DTC144WU	TRANSISTOR
		or RN1309	TRANSISTOR
Q38		2SD1819A/QRS/-X	TRANSISTOR
		or 2SC4081/QRS/-X	TRANSISTOR
		or 2PC4081/R/-X	TRANSISTOR
Q47		2SK433/D/-W	JUNCTION FET
Q48		2SK433/D/-W	JUNCTION FET
Q102		UN5211	TRANSISTOR
		or RN1302	TRANSISTOR
		or DTC114EU	TRANSISTOR
Q152		2SB1218A/QR/-X	TRANSISTOR
		or 2SA1576A/QRS/-X	TRANSISTOR
		or 2PA1576/R/-X	TRANSISTOR
Q2001		2SC4081/QRS/-X	TRANSISTOR
		or 2SD1819A/QRS/-X	TRANSISTOR
		or 2PC4081/R/-X	TRANSISTOR
Q2002		2SC4081/QRS/-X	TRANSISTOR
		or 2PC4081/R/-X	TRANSISTOR
		or 2SD1819A/QRS/-X	TRANSISTOR
Q2003		DTA144WU	TRANSISTOR
		or RN2309	TRANSISTOR
		or UN511E	TRANSISTOR
Q2051		2SC4081/QRS/-X	TRANSISTOR
		or 2PC4081/R/-X	TRANSISTOR
		or 2SD1819A/QRS/-X	TRANSISTOR
Q2052		2SA1576A/QR/-X	TRANSISTOR
		or 2SB1218A/QR/-X	TRANSISTOR
		or 2PA1576/R/-X	TRANSISTOR
Q2053		DTC144WU	TRANSISTOR
		or RN1309	TRANSISTOR
		or UN521E	TRANSISTOR

#	△ REF No.	PART No.	PART NAME, DESCRIPTION
Q2054		2SA1576A/QR/-X	TRANSISTOR
		or 2PA1576/R/-X	TRANSISTOR
		or 2SB1218A/QR/-X	TRANSISTOR
Q2055		DTC144WU	TRANSISTOR
		or RN1309	TRANSISTOR
		or UN521E	TRANSISTOR
Q2251		DTA144WU	TRANSISTOR
		or RN2309	TRANSISTOR
		or UN511E	TRANSISTOR
Q2253		DTC144WU	TRANSISTOR
		or RN1309	TRANSISTOR
		or UN521E	TRANSISTOR
Q2711		2SC4081/QRS/-X	TRANSISTOR
		or 2SD1819A/QRS/-X	TRANSISTOR
		or 2PC4081/R/-X	TRANSISTOR
Q2712		2SC4081/QRS/-X	TRANSISTOR
		or 2PC4081/R/-X	TRANSISTOR
		or 2SD1819A/QRS/-X	TRANSISTOR
Q2713		DTA114EU	TRANSISTOR
		or RN2302	TRANSISTOR
		or UN5111	TRANSISTOR
Q2714		DTC144WU	TRANSISTOR
		or RN1309	TRANSISTOR
		or UN521E	TRANSISTOR
Q3001		PTZ-NV16	PHOTO TRANSISTOR
		or PTZ-NV09	PHOTO TRANSISTOR
Q3002		PTZ-NV16	PHOTO TRANSISTOR
		or PTZ-NV09	PHOTO TRANSISTOR
Q3003		2SD1819A/QRS/-X	TRANSISTOR
		or 2SC4081/QRS/-X	TRANSISTOR
		or 2PC4081/R/-X	TRANSISTOR
Q3005		2SD1819A/QRS/-X	TRANSISTOR
		or 2PC4081/R/-X	TRANSISTOR
		or 2SC4081/QRS/-X	TRANSISTOR
Q5101		2SK2632-CB14	POWER MOS FET
		or 2SK2129-LT	POWER MOS FET
		or 2SK2666F04	FE TRANSISTOR
Q5102		2SD2144S/UV/-T	TRANSISTOR
Q5301		2SB1256	TRANSISTOR
Q5302		UN5215	TRANSISTOR
		or DTC114TU	TRANSISTOR
Q5304		UN5211	TRANSISTOR
		or RN1302	TRANSISTOR
		or DTC114EU	TRANSISTOR
Q5305		2SC1740S/RS/-T	TRANSISTOR
		or 2SC3199/YG/-T	TRANSISTOR
Q5306		2SD2144S/UVW/-T	TRANSISTOR
Q5315		2SD2061/F/	TRANSISTOR
Q5316		2SD1819A/RS/-X	TRANSISTOR
		or 2PC4081/R/-X	TRANSISTOR
		or 2SC4081/RS/-X	TRANSISTOR
Q5317		2SD2061/F/	TRANSISTOR
Q5318		2SD1819A/RS/-X	TRANSISTOR
		or 2PC4081/R/-X	TRANSISTOR
		or 2SC4081/RS/-X	TRANSISTOR
Q5320		UN5111	TRANSISTOR
		or RN2302	TRANSISTOR
		or DTA114EU	TRANSISTOR
Q5322		2SD1450/ST/-T	TRANSISTOR
		or 2SD1302/ST/-T	TRANSISTOR
Q5323		2SD2375/QP/	TRANSISTOR

#	△	REF No.	PART No.	PART NAME, DESCRIPTION	#	△	REF No.	PART No.	PART NAME, DESCRIPTION	
Q5451			2SB927/ST-T	TRANSISTOR				or PG104RS	FR DIODE	
Q5452			DTC144EU	TRANSISTOR				or 10ELS2	FR DIODE	
Q6001			2SC3068	TRANSISTOR				or ERA18-02-T2	FR DIODE	
Q6030			2SB1218A/RS-X	TRANSISTOR				or 1SR153-400-T2	FR DIODE	
			or 2PA1576/R/-X	TRANSISTOR	D5211			AU01Z	FR DIODE	
			or 2SA1576A/RS/-X	TRANSISTOR				or ERA18-02-T2	FR DIODE	
Q6031			DTC114EU	TRANSISTOR				or PG104RS	FR DIODE	
			or RN1302	TRANSISTOR				or 10ELS2	FR DIODE	
			or UN5211	TRANSISTOR				or 1SR153-400-T2	FR DIODE	
D2001			1N4148M	DIODE	D5301			UZ15BSA	ZENER DIODE	
			or 1SS133	DIODE				or RD15ES/B1/-T2	ZENER DIODE	
D2201			11ES2	DIODE				or MTZJ15A	ZENER DIODE	
D2253			DAP202U	DIODE	D5302			11ES2	DIODE	
D3001			LNB2301L01VI	LE DIODE				or ERA15-02-T2	DIODE	
D3002			11ES2	DIODE	D5303			UZ12BSC	ZENER DIODE	
D3003			11ES2	DIODE				or MTZJ12C	ZENER DIODE	
D3005			RD39ES/B3/-T2	ZENER DIODE				or RD12ES/B3/-T2	ZENER DIODE	
			or MTZJ39C	ZENER DIODE	D5304			1N4148M	DIODE	
			or UZ39BSC	ZENER DIODE				or 1SS133	DIODE	
D3007			1SS133	DIODE	D5305			UZ30BSA	ZENER DIODE	
			or 1N4148M	DIODE				or RD30ES/B1/-T2	ZENER DIODE	
D3008			1SS133	DIODE				or MTZJ30A	ZENER DIODE	
			or 1N4148M	DIODE	D5307			UZ6.2BSC	ZENER DIODE	
D3009			1SS133	DIODE				or MTZJ6.2C	ZENER DIODE	
			or 1N4148M	DIODE				or RD6.2ES/B3/-T2	ZENER DIODE	
D3011			1SS133	DIODE	D5311			RD5.1JS/B2/-T2	ZENER DIODE	
			or 1N4148M	DIODE				or MA4051N/M/-T2	ZENER DIODE	
D3012			1SS133	DIODE	D5312			1N4148M	DIODE	
			or 1N4148M	DIODE				or 1SS133	DIODE	
D3014			1SS133	DIODE	D5313			RD5.1JS/B2/-T2	ZENER DIODE	
			or 1N4148M	DIODE	D5314			1SS133	DIODE	
D5001			S1WB(A)60F4102	BRIDGE DIODE	D5351			11E2-T5	DIODE	
			or S1WB(A)60F4072X	BRIDGE DIODE	D5352			11E2-T5	DIODE	
			or S1WB(A)60F4062X	BRIDGE DIODE	D5353			11E2-T5	DIODE	
D5101			AU01	FR DIODE	D5354			11E2-T5	DIODE	
			or ERA18-04-T2	FR DIODE	D6001			MTZJ10B	ZENER DIODE	
			or PG104RS	FR DIODE	D6002			HZ30-2L-T2	ZENER DIODE	
			or 1SR153-400-T2	FR DIODE				or HZ30-2LTD	Z DIODE (M)	
			or 10ELS4	FR DIODE	R1			NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
D5102			AU01	FR DIODE	R2			NRSA02J-561X	MG RESISTOR	560Ω,1/10W
			or ERA18-04-T2	FR DIODE	R3			NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
			or PG104RS	FR DIODE	R4			NRSA02J-822X	MG RESISTOR	8.2kΩ,1/10W
			or 1SR153-400-T2	FR DIODE	R5			NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
			or 10ELS4	FR DIODE	R6			NRSA02J-681X	MG RESISTOR	680Ω,1/10W
D5103			1N4148M	DIODE	R7			NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
			or 1SS133	DIODE	R9			NRSA02J-333X	MG RESISTOR	33kΩ,1/10W
D5201			ERA18-02-T2	FR DIODE	R10			NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
			or 1SR153-400-T2	FR DIODE	R11			NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
D5202			FML-12S	FR DIODE	R13			NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
			or FCF06A20	FR DIODE	R14			NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
			or MA644	FR DIODE	R15			NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
			or YG901C2	FR DIODE	R16			NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
D5206			FMB-24	BARRIER DIODE	R17			NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
			or F5KQ40B	BARRIER DIODE	R18			NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
			or MA7D49	SB DIODE	R19			NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
			or YG801C04	SB DIODE	R24			NRVA02D-622X	CMF RESISTOR	6.2kΩ,1/10W
D5209			10ELS2	FR DIODE	R25			NRVA02D-152X	CMF RESISTOR	1.5kΩ,1/10W
			or ERA18-02-T2	FR DIODE	R48			NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
			or 1SR153-400-T2	FR DIODE	R49			NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
			or PG104RS	FR DIODE	R52			NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
D5210			AU01Z	FR DIODE	R54			NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W

#	△ REF No.	PART No.	PART NAME, DESCRIPTION
R55		NRSA02J-122X	MG RESISTOR 1.2kΩ,1/10W
R56		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W
R57		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R60		NRSA02J-183X	MG RESISTOR 18kΩ,1/10W
R61		NRSA02J-153X	MG RESISTOR 15kΩ,1/10W
R62		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R63		NDC21HJ-120X	CAPACITOR 12pF,50V
R64		NDC21HJ-220X	CAPACITOR 22pF,50V
R68		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W
R69		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W
R71		NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W
R72		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W
R73		NRSA02J-222X	MG RESISTOR 2.2kΩ,1/10W
R94		NRSA02J-222X	MG RESISTOR 2.2kΩ,1/10W
R120		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W
R121		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W
R122		NRSA02J-101X	MG RESISTOR 100Ω,1/10W
R123		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R133		NRSA02J-222X	MG RESISTOR 2.2kΩ,1/10W
R137		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R138		NRSA02J-392X	MG RESISTOR 3.9kΩ,1/10W
R143		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W
R168		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R169		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R192		QRE141J-475	RESISTOR 4.7MΩ,1/4W
R193		QRE141J-475	RESISTOR 4.7MΩ,1/4W
R194		QRE141J-475	RESISTOR 4.7MΩ,1/4W
R2001		NRSA02J-103X	MG RESISTOR 10kΩ,1/10W
R2002		NRSA02J-103X	MG RESISTOR 10kΩ,1/10W
R2003		NRSA02J-682X	MG RESISTOR 6.8kΩ,1/10W
R2004		NRSA02J-224X	MG RESISTOR 220kΩ,1/10W
R2005		NRSA02J-121X	MG RESISTOR 120Ω,1/10W
R2006		NRSA02J-273X	MG RESISTOR 27kΩ,1/10W
R2007		NRSA02J-223X	MG RESISTOR 22kΩ,1/10W
R2009		NRSA02J-101X	MG RESISTOR 100Ω,1/10W
R2013		NRSA02J-101X	MG RESISTOR 100Ω,1/10W
R2016		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W
R2018		NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W
R2019		NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W
R2053		NRSA02J-822X	MG RESISTOR 8.2kΩ,1/10W
R2054		NRSA02J-123X	MG RESISTOR 12kΩ,1/10W
R2055		NRSA02J-3R3X	MG RESISTOR 3.3Ω,1/10W
R2056		QRE141J-820Y	RESISTOR 82Ω,1/4W
R2057		NRSA02J-473X	MG RESISTOR 47kΩ,1/10W
R2058		NRSA02J-183X	MG RESISTOR 18kΩ,1/10W
R2059		NRSA02J-473X	MG RESISTOR 47kΩ,1/10W
R2060		NRSA02J-183X	MG RESISTOR 18kΩ,1/10W
R2201		NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W
R2202		NRSA02J-333X	MG RESISTOR 33kΩ,1/10W
R2203		NRSA02J-473X	MG RESISTOR 47kΩ,1/10W
R2204		NRSA02J-393X	MG RESISTOR 39kΩ,1/10W
R2205		NRSA02J-473X	MG RESISTOR 47kΩ,1/10W
R2206		NRSA02J-473X	MG RESISTOR 47kΩ,1/10W
R2207		NRSA02J-682X	MG RESISTOR 6.8kΩ,1/10W
R2208		NRSA02J-183X	MG RESISTOR 18kΩ,1/10W
R2209		NRSA02J-682X	MG RESISTOR 6.8kΩ,1/10W
R2210		NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W
R2211		NRSA02J-511X	MG RESISTOR 510Ω,1/10W
R2212		NCB21EK-683X	CAPACITOR 0.068μF,25V
R2213		NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W
R2214		NRSA02J-511X	MG RESISTOR 510Ω,1/10W

#	△ REF No.	PART No.	PART NAME, DESCRIPTION
R2215		NRSA02J-682X	MG RESISTOR 6.8kΩ,1/10W
R2216		NRSA02J-183X	MG RESISTOR 18kΩ,1/10W
R2217		NRSA02J-682X	MG RESISTOR 6.8kΩ,1/10W
R2218		NRSA02J-473X	MG RESISTOR 47kΩ,1/10W
R2219		NRSA02J-473X	MG RESISTOR 47kΩ,1/10W
R2220		NRSA02J-393X	MG RESISTOR 39kΩ,1/10W
R2221		NRSA02J-473X	MG RESISTOR 47kΩ,1/10W
R2222		NRSA02J-333X	MG RESISTOR 33kΩ,1/10W
R2223		NRSA02J-182X	MG RESISTOR 1.8kΩ,1/10W
R2224		NRSA02J-471X	MG RESISTOR 470Ω,1/10W
R2225		NRSA02J-221X	MG RESISTOR 220Ω,1/10W
R2226		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R2228		NRSA02J-221X	MG RESISTOR 220Ω,1/10W
R2229		NRSA02J-221X	MG RESISTOR 220Ω,1/10W
R2251		NRSA02J-101X	MG RESISTOR 100Ω,1/10W
R2253		NRSA02J-270X	MG RESISTOR 27Ω,1/10W
R2254		NRSA02J-220X	MG RESISTOR 22Ω,1/10W
R2256		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R2257		NRSA02J-101X	MG RESISTOR 100Ω,1/10W
R2258		NRSA02J-221X	MG RESISTOR 220Ω,1/10W
R2259		NRSA02J-222X	MG RESISTOR 2.2kΩ,1/10W
R2711		NRSA02J-221X	MG RESISTOR 220Ω,1/10W
R2712		NRSA02J-221X	MG RESISTOR 220Ω,1/10W
R2713		NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W
R2714		NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W
R2715		NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W
R2716		NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W
R3001		NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W
R3002		NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W
R3003		NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W
R3004		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R3010		NRSA02J-105X	MG RESISTOR 1MΩ,1/10W
R3014		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R3015		NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W
R3016		NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W
R3017		NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W
R3018		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R3019		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R3020		NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W
R3021		NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W
R3022		NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W
R3023		NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W
R3024		NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W
R3025		NRSA02J-221X	MG RESISTOR 220Ω,1/10W
R3031		NRSA02J-103X	MG RESISTOR 10kΩ,1/10W
R3032		NRSA02J-103X	MG RESISTOR 10kΩ,1/10W
R3033		NRSA02J-103X	MG RESISTOR 10kΩ,1/10W
R3034		NRSA02J-103X	MG RESISTOR 10kΩ,1/10W
R3035		NRSA02J-103X	MG RESISTOR 10kΩ,1/10W
R3036		NRSA02J-103X	MG RESISTOR 10kΩ,1/10W
R3037		NRSA02J-103X	MG RESISTOR 10kΩ,1/10W
R3038		NRSA02J-103X	MG RESISTOR 10kΩ,1/10W
R3039		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R3040		NRSA02J-152X	MG RESISTOR 1.5kΩ,1/10W
R3041		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R3042		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R3043		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R3044		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R3045		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R3046		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
R3047		NRSA02J-102X	MG RESISTOR 1kΩ,1/10W

#	△	REF No.	PART No.	PART NAME, DESCRIPTION		#	△	REF No.	PART No.	PART NAME, DESCRIPTION	
R3048			NRSA02J-102X	MG RESISTOR	1kΩ, 1/10W	R3241			NRSA02J-0R0X	MG RESISTOR	0Ω, 1/10W
R3049			NRSA02J-102X	MG RESISTOR	1kΩ, 1/10W	R3242			NRSA02J-0R0X	MG RESISTOR	0Ω, 1/10W
R3050			NRSA02J-472X	MG RESISTOR	4.7kΩ, 1/10W	R3243			NRSA02J-103X	MG RESISTOR	10kΩ, 1/10W
R3051			NRSA02J-102X	MG RESISTOR	1kΩ, 1/10W	R3244			NRSA02J-103X	MG RESISTOR	10kΩ, 1/10W
R3052			NRSA02J-102X	MG RESISTOR	1kΩ, 1/10W	R3246			NRSA02J-472X	MG RESISTOR	4.7kΩ, 1/10W
R3053			NRSA02J-472X	MG RESISTOR	4.7kΩ, 1/10W	R3250			NRSA02J-103X	MG RESISTOR	10kΩ, 1/10W
R3054			NRSA02J-272X	MG RESISTOR	2.7kΩ, 1/10W	R3252			NRSA02J-103X	MG RESISTOR	10kΩ, 1/10W
R3055			NRSA02J-102X	MG RESISTOR	1kΩ, 1/10W	R3253			NRSA02J-103X	MG RESISTOR	10kΩ, 1/10W
R3056			NRSA02J-102X	MG RESISTOR	1kΩ, 1/10W	R3255			NRSA02J-103X	MG RESISTOR	10kΩ, 1/10W
R3057			NRSA02J-471X	MG RESISTOR	470Ω, 1/10W	R3256			NRSA02J-391X	MG RESISTOR	390Ω, 1/10W
R3058			NRSA02J-102X	MG RESISTOR	1kΩ, 1/10W	R3257			NRSA02J-391X	MG RESISTOR	390Ω, 1/10W
R3059			NRSA02J-471X	MG RESISTOR	470Ω, 1/10W	R3258			NRSA02J-103X	MG RESISTOR	10kΩ, 1/10W
R3060			NRSA02J-102X	MG RESISTOR	1kΩ, 1/10W	R3259			NRSA02J-393X	MG RESISTOR	39kΩ, 1/10W
R3061			NRSA02J-102X	MG RESISTOR	1kΩ, 1/10W	R3260			QRE141J-103	RESISTOR	10kΩ, 1/4W
R3062			NRSA02J-102X	MG RESISTOR	1kΩ, 1/10W	R3301			NRSA02J-102X	MG RESISTOR	1kΩ, 1/10W
R3064			NRSA02J-102X	MG RESISTOR	1kΩ, 1/10W	R3302			NRSA02J-102X	MG RESISTOR	1kΩ, 1/10W
R3067			NRSA02J-472X	MG RESISTOR	4.7kΩ, 1/10W	R3303			NRSA02J-472X	MG RESISTOR	4.7kΩ, 1/10W
R3068			NRSA02J-102X	MG RESISTOR	1kΩ, 1/10W	R3304			NRSA02J-472X	MG RESISTOR	4.7kΩ, 1/10W
R3069			NRSA02J-271X	MG RESISTOR	270Ω, 1/10W	R3310			NRSA02J-105X	MG RESISTOR	1MΩ, 1/10W
R3070			NRSA02J-271X	MG RESISTOR	270Ω, 1/10W	R3314			NRSA02J-472X	MG RESISTOR	4.7kΩ, 1/10W
R3071			NRSA02J-472X	MG RESISTOR	4.7kΩ, 1/10W	R3315			NRSA02J-472X	MG RESISTOR	4.7kΩ, 1/10W
R3073			NRSA02J-472X	MG RESISTOR	4.7kΩ, 1/10W	R3316			NRSA02J-472X	MG RESISTOR	4.7kΩ, 1/10W
R3074			NRSA02J-472X	MG RESISTOR	4.7kΩ, 1/10W	R3317			NRSA02J-0R0X	MG RESISTOR	0Ω, 1/10W
R3075			NRSA02J-472X	MG RESISTOR	4.7kΩ, 1/10W	R3318			NRSA02J-102X	MG RESISTOR	1kΩ, 1/10W
R3076			NRSA02J-472X	MG RESISTOR	4.7kΩ, 1/10W	R3319			NRSA02J-472X	MG RESISTOR	4.7kΩ, 1/10W
R3077			NRSA02J-472X	MG RESISTOR	4.7kΩ, 1/10W	R3320			NRSA02J-472X	MG RESISTOR	4.7kΩ, 1/10W
R3078			NRSA02J-102X	MG RESISTOR	1kΩ, 1/10W	R3321			NRSA02J-222X	MG RESISTOR	2.2kΩ, 1/10W
R3079			NRSA02J-472X	MG RESISTOR	4.7kΩ, 1/10W	R3322			NRSA02J-472X	MG RESISTOR	4.7kΩ, 1/10W
R3080			NRSA02J-682X	MG RESISTOR	6.8kΩ, 1/10W	R3323			NRSA02J-472X	MG RESISTOR	4.7kΩ, 1/10W
R3201			NRSA02J-104X	MG RESISTOR	100kΩ, 1/10W	R3324			NRSA02J-472X	MG RESISTOR	4.7kΩ, 1/10W
R3203			NRSA02J-562X	MG RESISTOR	5.6kΩ, 1/10W	R3325			NRSA02J-472X	MG RESISTOR	4.7kΩ, 1/10W
R3204			NRSA02J-222X	MG RESISTOR	2.2kΩ, 1/10W	R3326			NRSA02J-332X	MG RESISTOR	3.3kΩ, 1/10W
R3205			NRSA02J-103X	MG RESISTOR	10kΩ, 1/10W	R3327			NRSA02J-332X	MG RESISTOR	3.3kΩ, 1/10W
R3206			NRSA02J-472X	MG RESISTOR	4.7kΩ, 1/10W	R3331			NRSA02J-102X	MG RESISTOR	1kΩ, 1/10W
R3207			NRSA02J-103X	MG RESISTOR	10kΩ, 1/10W	R3343			NRSA02J-102X	MG RESISTOR	1kΩ, 1/10W
R3209			QRE141J-181Y	RESISTOR	180Ω, 1/4W	R3344			NRSA02J-102X	MG RESISTOR	1kΩ, 1/10W
R3210			NRSA02J-183X	MG RESISTOR	18kΩ, 1/10W	R3345			NRSA02J-102X	MG RESISTOR	1kΩ, 1/10W
R3211			NRSA02J-183X	MG RESISTOR	18kΩ, 1/10W	R3346			NRSA02J-102X	MG RESISTOR	1kΩ, 1/10W
R3212			NRSA02J-181X	MG RESISTOR	180Ω, 1/10W	R3347			NRSA02J-102X	MG RESISTOR	1kΩ, 1/10W
R3213			NRSA02J-273X	MG RESISTOR	27kΩ, 1/10W	R3348			NRSA02J-102X	MG RESISTOR	1kΩ, 1/10W
R3214			NRSA02J-181X	MG RESISTOR	180Ω, 1/10W	R3352			NRSA02J-472X	MG RESISTOR	4.7kΩ, 1/10W
R3215			NRSA02J-273X	MG RESISTOR	27kΩ, 1/10W	R3357			NRSA02J-102X	MG RESISTOR	1kΩ, 1/10W
R3220			NRSA02J-103X	MG RESISTOR	10kΩ, 1/10W	R3358			NRSA02J-102X	MG RESISTOR	1kΩ, 1/10W
R3223			NRSA02J-472X	MG RESISTOR	4.7kΩ, 1/10W	R3359			NRSA02J-102X	MG RESISTOR	1kΩ, 1/10W
R3224			NRSA02J-472X	MG RESISTOR	4.7kΩ, 1/10W	R3360			NRSA02J-102X	MG RESISTOR	1kΩ, 1/10W
R3225			NRSA02J-104X	MG RESISTOR	100kΩ, 1/10W	R3361			NRSA02J-102X	MG RESISTOR	1kΩ, 1/10W
R3226			NRSA02J-103X	MG RESISTOR	10kΩ, 1/10W	R3362			NRSA02J-102X	MG RESISTOR	1kΩ, 1/10W
R3227			NRSA02J-393X	MG RESISTOR	39kΩ, 1/10W	R3365			NRSA02J-102X	MG RESISTOR	1kΩ, 1/10W
R3228			NRSA02J-474X	MG RESISTOR	470kΩ, 1/10W	R3366			NRSA02J-0R0X	MG RESISTOR	0Ω, 1/10W
R3229			NRSA02J-334X	MG RESISTOR	330kΩ, 1/10W	R3367			NRSA02J-102X	MG RESISTOR	1kΩ, 1/10W
R3230			NRSA02J-102X	MG RESISTOR	1kΩ, 1/10W	R3368			NRSA02J-102X	MG RESISTOR	1kΩ, 1/10W
R3231			NRSA02J-472X	MG RESISTOR	4.7kΩ, 1/10W	R3369			NRSA02J-472X	MG RESISTOR	4.7kΩ, 1/10W
R3232			NRSA02J-472X	MG RESISTOR	4.7kΩ, 1/10W	R3370			NRSA02J-0R0X	MG RESISTOR	0Ω, 1/10W
R3233			NRSA02J-103X	MG RESISTOR	10kΩ, 1/10W	R3371			NRSA02J-472X	MG RESISTOR	4.7kΩ, 1/10W
R3234			NRSA02J-103X	MG RESISTOR	10kΩ, 1/10W	R3373			NRSA02J-472X	MG RESISTOR	4.7kΩ, 1/10W
R3235			NRSA02J-221X	MG RESISTOR	220Ω, 1/10W	R3374			NRSA02J-102X	MG RESISTOR	1kΩ, 1/10W
R3236			NRSA02J-221X	MG RESISTOR	220Ω, 1/10W	R3375			NRSA02J-0R0X	MG RESISTOR	0Ω, 1/10W
R3237			NRSA02J-103X	MG RESISTOR	10kΩ, 1/10W	R3376			NRSA02J-472X	MG RESISTOR	4.7kΩ, 1/10W
R3238			NRSA02J-103X	MG RESISTOR	10kΩ, 1/10W	R3378			NRSA02J-472X	MG RESISTOR	4.7kΩ, 1/10W
R3239			NRSA02J-103X	MG RESISTOR	10kΩ, 1/10W	R3380			NRSA02J-472X	MG RESISTOR	4.7kΩ, 1/10W
R3240			NRSA02J-0R0X	MG RESISTOR	0Ω, 1/10W	R3501			NRSA02J-103X	MG RESISTOR	10kΩ, 1/10W

#	△ REF No.	PART No.	PART NAME, DESCRIPTION	#	△ REF No.	PART No.	PART NAME, DESCRIPTION
R3502		NRSA02J-103X	MG RESISTOR	10kΩ, 1/10W	R5451	NRSA02J-103X	MG RESISTOR
R3503		NRSA02J-103X	MG RESISTOR	10kΩ, 1/10W	R5452	QRE123J-331X	RESISTOR
R3504		NRSA02J-103X	MG RESISTOR	10kΩ, 1/10W	R6001	NRSA02J-271X	MG RESISTOR
R3505		NRSA02J-103X	MG RESISTOR	10kΩ, 1/10W	R6002	NRSA02J-0R0X	MG RESISTOR
R3506		NRSA02J-472X	MG RESISTOR	4.7kΩ, 1/10W	R6020	NRSA02J-0R0X	MG RESISTOR
R3507		NRSA02J-103X	MG RESISTOR	10kΩ, 1/10W	R6021	NRSA02J-0R0X	MG RESISTOR
R3508		NRSA02J-103X	MG RESISTOR	10kΩ, 1/10W	R6022	NRSA02J-0R0X	MG RESISTOR
R3509		NRSA02J-103X	MG RESISTOR	10kΩ, 1/10W	R6023	NRSA02J-0R0X	MG RESISTOR
R3510		NRSA02J-103X	MG RESISTOR	10kΩ, 1/10W	R6030	NRSA02J-102X	MG RESISTOR
R4001		NRSA02J-102X	MG RESISTOR	1kΩ, 1/10W	R6032	NRSA02J-0R0X	MG RESISTOR
R4003		NRSA02J-122X	MG RESISTOR	1.2kΩ, 1/10W	R6051	NRSA02J-101X	MG RESISTOR
R4005		NRSA02J-103X	MG RESISTOR	10kΩ, 1/10W	R6052	NRSA02J-101X	MG RESISTOR
R4007		NRSA02J-821X	MG RESISTOR	820Ω, 1/10W	R6053	NRSA02J-103X	MG RESISTOR
R4008		NRSA02J-562X	MG RESISTOR	5.6kΩ, 1/10W	R6054	NRSA02J-102X	MG RESISTOR
R4009		NRSA02J-222X	MG RESISTOR	2.2kΩ, 1/10W	R6084	NRSA02J-682X	MG RESISTOR
R4011		NRSA02J-103X	MG RESISTOR	10kΩ, 1/10W	R6085	NRSA02J-103X	MG RESISTOR
R4012		NRSA02J-103X	MG RESISTOR	10kΩ, 1/10W	R7168	NRSA02J-750X	MG RESISTOR
R4013		NRSA02J-562X	MG RESISTOR	5.6kΩ, 1/10W	VR2251	QVPA606-102Z	V RESISTOR, FMA REC FM
R4014		NRSA02J-0R0X	MG RESISTOR	0Ω, 1/10W	C1	QEK1CM-106	E CAPACITOR
R4015		NRSA02J-102X	MG RESISTOR	1kΩ, 1/10W	C3	NCF21CZ-105X	CAPACITOR
R5101		QRE141J-334Y	RESISTOR	330kΩ, 1/4W	C5	NCF21CZ-105X	CAPACITOR
R5102		QRE141J-334Y	RESISTOR	330kΩ, 1/4W	C6	NCB11EK-104X	CAPACITOR
R5103		QRE141J-683Y	RESISTOR	68kΩ, 1/4W	C7	QEK0JM-107	E CAPACITOR
R5104		QRG029J-154G	OMF RESISTOR	150kΩ, 2W	C9	NCF21CZ-105X	CAPACITOR
R5106		QRT01DJ-R39X	MF RESISTOR	0.39Ω, 1W	C11	NCF21CZ-105X	CAPACITOR
R5107		QRE121J-331Y	RESISTOR	330Ω, 1/2W	C12	NCB21EK-104X	CAPACITOR
R5108		NRSA02J-222X	MG RESISTOR	2.2kΩ, 1/10W	C13	QEK1HM-335	E CAPACITOR
R5109		NRSA02J-681X	MG RESISTOR	680Ω, 1/10W	C14	NCB21EK-333X	CAPACITOR
R5110		NRSA02J-224X	MG RESISTOR	220kΩ, 1/10W	C16	NCF21CZ-105X	CAPACITOR
R5111		NRSA02J-821X	MG RESISTOR	820Ω, 1/10W	C20	NCF21CZ-225X	CAPACITOR
R5301		NRSA02J-3R3X	MG RESISTOR	3.3Ω, 1/10W	C21	NCB21CK-563X	CAPACITOR
R5302		NRSA02J-3R3X	MG RESISTOR	3.3Ω, 1/10W	C23	NCB21HK-223X	CAPACITOR
R5303		NRSA02J-3R3X	MG RESISTOR	3.3Ω, 1/10W	C24	NCB21CK-474X	CAPACITOR
R5304		NRSA02J-3R9X	MG RESISTOR	3.9Ω, 1/10W	C25	NCB21EK-104X	CAPACITOR
R5307		NRSA02J-471X	MG RESISTOR	470Ω, 1/10W	C27	NDC21HJ-101X	CAPACITOR
R5308		NRSA02J-472X	MG RESISTOR	4.7kΩ, 1/10W	C29	NBE20JM-475X	T CAPACITOR
R5309		NRSA02J-222X	MG RESISTOR	2.2kΩ, 1/10W	C30	NBE20JM-475X	T CAPACITOR
R5312		NRSA02J-102X	MG RESISTOR	1kΩ, 1/10W	C31	NCB21HK-223X	CAPACITOR
R5313		NRSA02J-122X	MG RESISTOR	1.2kΩ, 1/10W	C32	NCB21HK-103X	CAPACITOR
△ R5314		QRZ9005-470X	FUSI RESISTOR	47Ω, 1/4W	C34	NCB21EK-473X	CAPACITOR
R5315		NRSA02J-122X	MG RESISTOR	1.2kΩ, 1/10W	C37	QEKJ0JM-476	E CAPACITOR
R5316		QRA14CF-2211Y	CMF RESISTOR	2.21kΩ, 1/4W	C41	NCB21EK-104X	CAPACITOR
R5317		QRA14CF-3481Y	CMF RESISTOR	3.48kΩ, 1/4W	C42	NCB21HK-103X	CAPACITOR
R5319		QRE141J-511Y	RESISTOR	510Ω, 1/4W	C43	NCB21HK-103X	CAPACITOR
R5320		NRSA02J-471X	MG RESISTOR	470Ω, 1/10W	C45	NCB21EK-104X	CAPACITOR
R5328		QRE141J-331Y	RESISTOR	330Ω, 1/4W	C46	NDC21HJ-101X	CAPACITOR
R5330		NRSA02J-561X	MG RESISTOR	560Ω, 1/10W	C47	NCB21EK-104X	CAPACITOR
R5331		NRSA02J-561X	MG RESISTOR	560Ω, 1/10W	C48	QEKJ0JM-476	E CAPACITOR
R5332		NRSA02J-561X	MG RESISTOR	560Ω, 1/10W	C49	NDC21HJ-331X	CAPACITOR
R5340		NRSA02J-471X	MG RESISTOR	470Ω, 1/10W	C54	QEKJ1HM-105	E CAPACITOR
R5341		NRSA02J-471X	MG RESISTOR	470Ω, 1/10W	C55	QEKJ1CM-106	E CAPACITOR
R5342		NRSA02J-102X	MG RESISTOR	1kΩ, 1/10W	C56	QEKJ1HM-335	E CAPACITOR
R5343		NRSA02J-103X	MG RESISTOR	10kΩ, 1/10W	C57	NCB21EK-104X	CAPACITOR
R5344		NRSA02J-471X	MG RESISTOR	470Ω, 1/10W	C58	NCB21EK-104X	CAPACITOR
R5345		NRSA02J-471X	MG RESISTOR	470Ω, 1/10W	C59	NCB21EK-473X	CAPACITOR
R5346		NRSA02J-102X	MG RESISTOR	1kΩ, 1/10W	C62	NCF21CZ-334X	CAPACITOR
R5347		NRSA02J-103X	MG RESISTOR	10kΩ, 1/10W	C63	NDC21HG-151X	CAPACITOR
R5348		NRSA02J-471X	MG RESISTOR	470Ω, 1/10W	C64	QEKJ0JM-227	E CAPACITOR
R5349		NRSA02J-473X	MG RESISTOR	47kΩ, 1/10W	C65	NCB21EK-104X	CAPACITOR
R5350		NRSA02J-221X	MG RESISTOR	220Ω, 1/10W	C73	NCB21HK-103X	CAPACITOR
R5351		NRSA02J-473X	MG RESISTOR	47kΩ, 1/10W	C74	NRSA02J-0R0X	MG RESISTOR

#	△	REF No.	PART No.	PART NAME, DESCRIPTION		#	△	REF No.	PART No.	PART NAME, DESCRIPTION	
C76			NRSA02J-0R0X	MG RESISTOR	0Ω, 1/10W	C2228			QEKJ1CM-476	E CAPACITOR	47μF, 16V
C77			NRSA02J-0R0X	MG RESISTOR	0Ω, 1/10W	C2229			QEKJ1CM-226	E CAPACITOR	22μF, 16V
C79			NDC21HJ-120X	CAPACITOR	12pF, 50V	C2230			QEKJ1CM-106	E CAPACITOR	10μF, 16V
C85			NCB21HK-103X	CAPACITOR	0.01μF, 50V	C2231			QETC1HM-106	E CAPACITOR	10μF, 50V
C86			QEKJ0JM-476	E CAPACITOR	47μF, 6.3V	C2232			QETC1HM-106	E CAPACITOR	10μF, 50V
C87			NCB21HK-103X	CAPACITOR	0.01μF, 50V	C2233			QEKJ1HM-105	E CAPACITOR	1μF, 50V
C88			NCB21HK-103X	CAPACITOR	0.01μF, 50V	C2234			QEKJ1HM-105	E CAPACITOR	1μF, 50V
C89			NCB21HK-103X	CAPACITOR	0.01μF, 50V	C2236			QEKJ1CM-476	E CAPACITOR	47μF, 16V
C90			NCB21HK-103X	CAPACITOR	0.01μF, 50V	C2251			NCB21HK-103X	CAPACITOR	0.01μF, 50V
C91			NCB21EK-104X	CAPACITOR	0.1μF, 25V	C2252			NCB21HK-103X	CAPACITOR	0.01μF, 50V
C92			NRSA02J-682X	MG RESISTOR	6.8kΩ, 1/10W	C2253			NCB21HK-103X	CAPACITOR	0.01μF, 50V
C98			NCB21HK-103X	CAPACITOR	0.01μF, 50V	C2254			QEKJ1CM-476	E CAPACITOR	47μF, 16V
C105			QDYB1CM-103Y	CAPACITOR	0.01μF, 16V	C2255			NCB21CK-104X	CAPACITOR	0.1μF, 16V
C107			NDC21HJ-5R0X	CAPACITOR	5pF, 50V	C2256			NDC21HJ-101X	CAPACITOR	100pF, 50V
C108			NCB21EK-104X	CAPACITOR	0.1μF, 25V	C2257			NCB21HK-103X	CAPACITOR	0.01μF, 50V
C118			NCB21CK-474X	CAPACITOR	0.47μF, 16V	C2258			NCB21HK-223X	CAPACITOR	0.022μF, 50V
C127			NCB21CK-474X	CAPACITOR	0.47μF, 16V	C2259			NCB21HK-103X	CAPACITOR	0.01μF, 50V
C133			NCB21EK-104X	CAPACITOR	0.1μF, 25V	C2261			NCB21HK-103X	CAPACITOR	0.01μF, 50V
C134			NCB21HK-103X	CAPACITOR	0.01μF, 50V	C3001			QEKJ1CM-336	E CAPACITOR	33μF, 16V
C141			NCB21HK-103X	CAPACITOR	0.01μF, 50V	C3004			QETN0JM-228	E CAPACITOR	2200μF, 6.3V
C143			QEKJ0JM-476	E CAPACITOR	47μF, 6.3V	C3006			NCB21CK-473X	CAPACITOR	0.047μF, 16V
C164			NRSA02J-0R0X	MG RESISTOR	0Ω, 1/10W	C3012			NDC21HJ-102X	CAPACITOR	0.001μF, 50V
C165			NRSA02J-0R0X	MG RESISTOR	0Ω, 1/10W	C3015			QEKJ1CM-106	E CAPACITOR	10μF, 16V
C2002			QEKJ1CM-476	E CAPACITOR	47μF, 16V	C3016			NCB21HK-103X	CAPACITOR	0.01μF, 50V
C2003			NCB21HK-123X	CAPACITOR	0.012μF, 50V	C3017			NDC21HJ-180X	CAPACITOR	18pF, 50V
C2004			QEKJ1CM-226	E CAPACITOR	22μF, 16V	C3018			QAT7001-450Z	TRIM CAPACITOR, TIMER CLOCK	
C2005			NCB21HK-102X	CAPACITOR	0.001μF, 50V	C3022			NCB21CK-473X	CAPACITOR	0.047μF, 16V
C2006			NCB21HK-331X	CAPACITOR	330pF, 50V	C3025			QEKJ1HM-106	E CAPACITOR	10μF, 50V
C2007			QEKJ1CM-106	E CAPACITOR	10μF, 16V	C3026			NCB21HK-103X	CAPACITOR	0.01μF, 50V
C2008			NCB21HK-152X	CAPACITOR	0.0015μF, 50V	C3027			NCB21EK-104X	CAPACITOR	0.1μF, 25V
C2009			QEKJ1EM-475	E CAPACITOR	4.7μF, 25V	C3034			NCB21HK-221X	CAPACITOR	220pF, 50V
C2010			QEKJ1EM-475	E CAPACITOR	4.7μF, 25V	C3042			NRSA02J-0R0X	MG RESISTOR	0Ω, 1/10W
C2011			NCB21EK-333X	CAPACITOR	0.033μF, 25V	C3043			NRSA02J-0R0X	MG RESISTOR	0Ω, 1/10W
C2013			NCB21EK-333X	CAPACITOR	0.033μF, 25V	C3306			NCB21EK-104X	CAPACITOR	0.1μF, 25V
C2015			QEKJ1CM-226	E CAPACITOR	22μF, 16V	C3307			NCB21EK-104X	CAPACITOR	0.1μF, 25V
C2016			QEKJ1EM-475	E CAPACITOR	4.7μF, 25V	C4001			NDC21HJ-101X	CAPACITOR	100pF, 50V
C2051			NCB21HK-331X	CAPACITOR	330pF, 50V	C4002			NCB21HK-102X	CAPACITOR	0.001μF, 50V
C2052			QFV61HJ-823	F CAPACITOR	0.082μF, 50V	C4003			NCB21HK-102X	CAPACITOR	0.001μF, 50V
C2053			NCB21HK-472X	CAPACITOR	0.0047μF, 50V	C4004			NCB21HK-102X	CAPACITOR	0.001μF, 50V
C2054			NCB21EK-223X	CAPACITOR	0.022μF, 25V	C4005			NDC21HJ-470X	CAPACITOR	47pF, 50V
C2055			QEKJ1CM-106	E CAPACITOR	10μF, 16V	C4006			QEKJ1HM-105	E CAPACITOR	1μF, 50V
C2103			NCB21CK-474X	CAPACITOR	0.47μF, 16V	C4007			NCB21EK-104X	CAPACITOR	0.1μF, 25V
C2202			QETC1CM-226	E CAPACITOR	22μF, 16V	C4008			NCB21EK-103X	CAPACITOR	0.01μF, 25V
C2205			QEKJ1HM-105	E CAPACITOR	1μF, 50V	C4010			QEKJ1CM-106	E CAPACITOR	10μF, 16V
C2207			NCB21CK-473X	CAPACITOR	0.047μF, 16V	C4011			QEKJ0JM-107	E CAPACITOR	100μF, 6.3V
C2208			QETC1CM-476	E CAPACITOR	47μF, 16V	C4013			QEKJ1CM-106	E CAPACITOR	10μF, 16V
C2209			QETC1HM-225	E CAPACITOR	2.2μF, 50V	C4015			NCB21HK-222X	CAPACITOR	0.0022μF, 50V
C2210			QETC1CM-476	E CAPACITOR	47μF, 16V	C4017			NCB21CK-563X	CAPACITOR	0.056μF, 16V
C2211			NCB21HK-153X	CAPACITOR	0.015μF, 50V	C4018			NDC21HJ-221X	CAPACITOR	220pF, 50V
C2212			NCB21HK-103X	CAPACITOR	0.01μF, 50V	△ C5001			QFZ9051-683	F CAPACITOR	0.068μF, 250V
C2213			QEKJ1EM-475	E CAPACITOR	4.7μF, 25V	△ C5002			QFZ9051-333	F CAPACITOR	0.033μF, 250V
C2214			NCB21HK-103X	CAPACITOR	0.01μF, 50V	△ C5005			QCZ9071-222	CAPACITOR	0.0022μF, 400V
C2216			QEKJ1EM-475	E CAPACITOR	4.7μF, 25V	C5006			QEZ0374-686	E CAPACITOR	68μF, 400V
C2217			NCB21HK-103X	CAPACITOR	0.01μF, 50V	C5101			QCZ0212-472	CAPACITOR	0.0047μF, 1kV
C2218			NCB21HK-153X	CAPACITOR	0.015μF, 50V	C5102			QCZ0302-330Z	CAPACITOR	33pF, 1kV
C2219			QETC1CM-476	E CAPACITOR	47μF, 16V	C5104			QETC1HM-105	E CAPACITOR	1μF, 50V
C2220			QETC1HM-225	E CAPACITOR	2.2μF, 50V	C5105			QFN31HJ-183	F CAPACITOR	0.018μF, 50V
C2221			NCB21CK-473X	CAPACITOR	0.047μF, 16V	C5106			QCB1HJ-271	CAPACITOR	270pF, 50V
C2222			QEKJ1CM-476	E CAPACITOR	47μF, 16V	C5107			QFVF1HJ-104Z	F CAPACITOR	0.1μF, 50V
C2224			QEKJ1HM-105	E CAPACITOR	1μF, 50V	C5201			QEMU0JM-227	E CAPACITOR	220μF, 6.3V
C2227			QEKJ1HM-224	E CAPACITOR	0.22μF, 50V	C5202			QEMT1CM-128	E CAPACITOR	1200μF, 16V

#	△ REF No.	PART No.	PART NAME, DESCRIPTION
C5203		QETC1CM-227	E CAPACITOR 220μF,16V
C5204		QEMT1AM-128	E CAPACITOR 1200μF,10V
C5205		QETC1AM-227	E CAPACITOR 220μF,10V
C5207		QETC1JM-106	E CAPACITOR 10μF,63V
C5208		QETC1HM-106	E CAPACITOR 10μF,50V
C5301		QETC1AM-107	E CAPACITOR 100μF,10V
C5302		QETC1HM-106	E CAPACITOR 10μF,50V
C5303		QETC1CM-107	E CAPACITOR 100μF,16V
C5306		NCF21HZ-103X	CAPACITOR 0.01μF,50V
C5307		QETC1HM-474	E CAPACITOR 0.47μF,50V
C5308		NCB21HK-102X	CAPACITOR 0.001μF,50V
C5309		QETC1AM-107	E CAPACITOR 100μF,10V
C5310		QETC1CM-226	E CAPACITOR 22μF,16V
C5314		NCB21HK-102X	CAPACITOR 0.001μF,50V
C5315		QETC1AM-107	E CAPACITOR 100μF,10V
C5316		QETC1CM-476	E CAPACITOR 47μF,16V
C5317		QETC1CM-107	E CAPACITOR 100μF,16V
C6001		QETC1CM-476	E CAPACITOR 47μF,16V
C6003		QETC1CM-336	E CAPACITOR 33μF,16V
C6004		NCB21HK-103X	CAPACITOR 0.01μF,50V
C6005		QETC1HM-106	E CAPACITOR 10μF,50V
C6006		NCB21HK-103X	CAPACITOR 0.01μF,50V
C6008		NCB21HK-103X	CAPACITOR 0.01μF,50V
C6012		QETC1HM-106	E CAPACITOR 10μF,50V
C6014		NCB21CK-473X	CAPACITOR 0.047μF,16V
C6024		NCB21HK-471X	CAPACITOR 470pF,50V
C6027		NDC21HJ-101X	CAPACITOR 100pF,50V
C6031		QETC1HM-106	E CAPACITOR 10μF,50V
C6033		NRSA02J-0R0X	MG RESISTOR 0Ω, 1/10W
C6051		NDC21HJ-101X	CAPACITOR 100pF,50V
C6052		NCB21HK-103X	CAPACITOR 0.01μF,50V
L1		QQL29BJ-100Z	COIL 10μH
L4		QQL29BJ-100Z	COIL 10μH
L7		QQL29BJ-100Z	COIL 10μH
L9		QQL29BJ-100Z	COIL 10μH
L12		QRE141J-0R0Y	RESISTOR 0Ω, 1/4W
L13		QQL071J-120Y	COIL 12μH
L14		QQL071J-820Y	COIL 82μH
L16		QQL29BJ-100Z	COIL 10μH
L18		PELN1203	COIL 12μH
L2251		QQL29BJ-100Z	COIL 10μH
L3003		QQL29BJ-100Z	COIL 10μH
L4001		QQL071J-270Y	COIL 27μH
L5201		PELN1184	COIL 33μH
L5202		PU60944-330K	COIL 33μH
L5301		QQL01BK-101Z	COIL 100μH
L6002		QQL29BK-1R0Z	COIL 1μH
L6031		QQL29BK-1R0Z	COIL 1μH
CF3001		QAX0356-001Z	RESONATOR
CF3301		QAX0356-001Z	RESONATOR
X1		QAX0436-001	CRYSTAL RESONATOR
X3001		QAX0445-001	CRYSTAL RESONATOR
S3003		QSW0695-001	PUSH SWITCH
K5101		QQR0678-001Z	FERRITE BEAD
PC3001		GP3S123	PHOTOTRANSISTOR
PC3002		GP3S123	PHOTOTRANSISTOR
△ PC5101		ON3171/R/	IC(PHOTO COUPLE)
T2051		PELN0832	OSC TRANSFORMER
△ T5001		QQS0021-001	SW TRANSFORMER
ET1		LP40280-001B	EARTH PLATE
SD1		LP30364-001A	S.CASE(PRE/REC)

#	△ REF No.	PART No.	PART NAME, DESCRIPTION
TU6001		QAU0074-001	TUNER
△ HS1		PQ46583-1-1	HEAT SINK,Q5101
OT1		QYTDST3008Z	SCREW,X2 Q5101
△ F5001		QMF51E2-1R6J1	FUSE T1.6A
FC5001		QNG0006-001Z	FUSE CLIP,F5001
FC5002		QNG0006-001Z	FUSE CLIP,F5001
J7108		PU61012	MINI JACK,R.PAUSE RAE
△ LF5001		PELN1204-01-01	LINE FILTER
△ LF5002		QQR0608-001	LINE FILTER
WR11		QUB321-06A2A2	SIN TWIST WIRE
CN1		QGF1018C1-11	FPC CONNECTOR,(1-11)U.DRUM
CN2001		QGF1207C1-07	FPC CONNECTOR,(1-7)A/C HEAD
CN2002		QGB2532J1-02	CONNECTOR,(1-2)FE HEAD
CN3001		QGB2015M1-08	CONNECTOR,(1-8)CAP.MOTOR
CN3003		QGB2532J1-02	CONNECTOR,(1-2)L.MOTOR
CN3004		QGB2534J2-04	CONNECTOR,(1-4)R.ENCODER
CN3005		QGF1207C1-12	FPC CONNECTOR,(1-12)FRONT
CN3006		QGF1207C1-07	FPC CONNECTOR,(1-7)JOG
CN4001		QGF1207C1-04	FPC CONNECTOR,(1-4)DRUM MDA
△ CN5001		QGA7901C3-02	CONNECTOR,(1-2)AC IN
CN7104		QGB2013K1-11	CONNECTOR,(1-11)TERMINAL
CN7105		QGB2013K1-13	CONNECTOR,(1-13)TERMINAL
CN7106		QGB2013K1-11	CONNECTOR,(3-13)TERMINAL
CN7162		QGF1207C1-05	FPC CONNECTOR,(1-5)FRONT
△ CP3003		ICP-N20	CIRCUIT PROTECTOR
△ CP4001		ICP-N15	CIRCUIT PROTECTOR
△ CP5301		ICP-N38	CIRCUIT PROTECTOR
△ CP5302		ICP-N25	CIRCUIT PROTECTOR
△ CP5303		ICP-N25	CIRCUIT PROTECTOR

2D SVHS BOARD ASSEMBLY <05>

PW1	LPA10019-01A	2D SVHS BOARD ASSY
IC1001	JCP8008	IC
IC1002	VC2076DP	IC
IC1006	HA118092FP1	IC
IC1007	BA10358F	IC
IC1201	JCP8013	IC
Q1005	UN521E	TRANSISTOR
	or DTC144WU	TRANSISTOR
	or RN1309	TRANSISTOR
Q1006	2SA1576A/QRS/-X	TRANSISTOR
Q1007	2SC4081/QRS/-X	TRANSISTOR
Q1012	2SD1819A/QRS/-X	TRANSISTOR
	or 2SC4081/QRS/-X	TRANSISTOR
	or 2PC4081/R/-X	TRANSISTOR
Q1014	2SC4081/QRS/-X	TRANSISTOR
Q1015	2SC4081/QRS/-X	TRANSISTOR
Q1016	UN521E	TRANSISTOR
	or DTC144WU	TRANSISTOR
	or RN1309	TRANSISTOR
Q1201	2SC4081/QRS/-X	TRANSISTOR
Q1202	2SC4081/QRS/-X	TRANSISTOR
Q1203	UN521E	TRANSISTOR
	or RN1309	TRANSISTOR
	or DTC144WU	TRANSISTOR
Q1205	2SC4081/QRS/-X	TRANSISTOR

#	△	REF No.	PART No.	PART NAME, DESCRIPTION		#	△	REF No.	PART No.	PART NAME, DESCRIPTION	
Q1206			2SC4081/QRS/-X	TRANSISTOR		R1038			NRSA02J-103X	MG RESISTOR	10kΩ, 1/10W
Q1207			2SA1576A/QRS/-X	TRANSISTOR		R1039			NRSA02J-394X	MG RESISTOR	390kΩ, 1/10W
Q1208			2SC4081/QRS/-X	TRANSISTOR		R1045			NRSA02J-272X	MG RESISTOR	2.7kΩ, 1/10W
Q1209			2SC4081/QRS/-X	TRANSISTOR		R1046			NRSA02J-273X	MG RESISTOR	27kΩ, 1/10W
Q1210			2SC4081/QRS/-X	TRANSISTOR		R1047			NRSA02J-103X	MG RESISTOR	10kΩ, 1/10W
Q1211			UN521E	TRANSISTOR		R1048			NRSA02J-103X	MG RESISTOR	10kΩ, 1/10W
			or RN1309	TRANSISTOR		R1053			NRSA02J-102X	MG RESISTOR	1kΩ, 1/10W
			or DTC144WU	TRANSISTOR		R1054			NRSA02J-221X	MG RESISTOR	220Ω, 1/10W
Q1212			2SB1218A/QR/-X	TRANSISTOR		R1055			NRVA02D-563X	CMF RESISTOR	56kΩ, 1/10W
			or 2SA1576A/QR/-X	TRANSISTOR		R1056			NRVA02D-224X	CMF RESISTOR	220kΩ, 1/10W
			or 2PA1576/R/-X	TRANSISTOR		R1058			NRSA02J-273X	MG RESISTOR	27kΩ, 1/10W
Q1213			2SA1576A/QRS/-X	TRANSISTOR		R1059			NRSA02J-0R0X	MG RESISTOR	0Ω, 1/10W
Q1215			2SD1819A/QRS/-X	TRANSISTOR		R1060			NRSA02J-0R0X	MG RESISTOR	0Ω, 1/10W
			or 2SC4081/QRS/-X	TRANSISTOR		R1063			NRSA02J-152X	MG RESISTOR	1.5kΩ, 1/10W
			or 2PC4081/R/-X	TRANSISTOR		R1064			NRSA02J-332X	MG RESISTOR	3.3kΩ, 1/10W
Q1216			UN521E	TRANSISTOR		R1065			NRSA02J-472X	MG RESISTOR	4.7kΩ, 1/10W
			or DTC144WU	TRANSISTOR		R1066			NRSA02J-272X	MG RESISTOR	2.7kΩ, 1/10W
			or RN1309	TRANSISTOR		R1067			NRSA02J-102X	MG RESISTOR	1kΩ, 1/10W
Q1217			2SC4081/QRS/-X	TRANSISTOR		R1068			NRSA02J-361X	MG RESISTOR	360Ω, 1/10W
Q1218			2SA1576A/QRS/-X	TRANSISTOR		R1069			NRSA02J-102X	MG RESISTOR	1kΩ, 1/10W
Q1219			2SA1576A/QRS/-X	TRANSISTOR		R1201			NRSA02J-123X	MG RESISTOR	12kΩ, 1/10W
Q1220			UN521E	TRANSISTOR		R1202			NRSA02J-223X	MG RESISTOR	22kΩ, 1/10W
			or DTC144WU	TRANSISTOR		R1203			NRSA02J-681X	MG RESISTOR	680Ω, 1/10W
			or RN1309	TRANSISTOR		R1204			NRSA02J-272X	MG RESISTOR	2.7kΩ, 1/10W
Q1221			2SD1819A/QRS/-X	TRANSISTOR		R1205			NRSA02J-182X	MG RESISTOR	1.8kΩ, 1/10W
			or 2SC4081/QRS/-X	TRANSISTOR		R1206			NRSA02J-101X	MG RESISTOR	100Ω, 1/10W
			or 2PC4081/R/-X	TRANSISTOR		R1207			NRSA02J-101X	MG RESISTOR	100Ω, 1/10W
D1002			1SS133	DIODE		R1208			NRSA02J-471X	MG RESISTOR	470Ω, 1/10W
			or 1N4148M	DIODE		R1209			NRSA02J-153X	MG RESISTOR	15kΩ, 1/10W
D1003			DAN202U	DIODE		R1210			NRSA02J-332X	MG RESISTOR	3.3kΩ, 1/10W
D1006			1SS133	DIODE		R1211			NRSA02J-821X	MG RESISTOR	820Ω, 1/10W
			or 1N4148M	DIODE		R1212			NRSA02J-331X	MG RESISTOR	330Ω, 1/10W
D1203			DAP202U	DIODE		R1213			NRSA02J-103X	MG RESISTOR	10kΩ, 1/10W
D1204			DAN202U	DIODE		R1216			NRSA02J-103X	MG RESISTOR	10kΩ, 1/10W
R1002			NRSA02J-103X	MG RESISTOR	10kΩ, 1/10W	R1218			NRSA02J-0R0X	MG RESISTOR	0Ω, 1/10W
R1003			NRSA02J-221X	MG RESISTOR	220Ω, 1/10W	R1219			NRSA02J-0R0X	MG RESISTOR	0Ω, 1/10W
R1004			NRSA02J-0R0X	MG RESISTOR	0Ω, 1/10W	R1220			NRSA02J-0R0X	MG RESISTOR	0Ω, 1/10W
R1006			NRSA02J-184X	MG RESISTOR	180kΩ, 1/10W	R1223			NRSA02J-0R0X	MG RESISTOR	0Ω, 1/10W
R1007			NRSA02J-0R0X	MG RESISTOR	0Ω, 1/10W	R1225			NRSA02J-0R0X	MG RESISTOR	0Ω, 1/10W
R1009			NRSA02J-155X	MG RESISTOR	1.5MΩ, 1/10W	R1226			NRSA02J-123X	MG RESISTOR	12kΩ, 1/10W
R1010			NRVA02D-332X	CMF RESISTOR	3.3kΩ, 1/10W	R1227			NRSA02J-180X	MG RESISTOR	18Ω, 1/10W
R1011			NRVA02D-332X	CMF RESISTOR	3.3kΩ, 1/10W	R1228			NRSA02J-822X	MG RESISTOR	8.2kΩ, 1/10W
R1012			NRVA02D-152X	CMF RESISTOR	1.5kΩ, 1/10W	R1229			NRSA02J-471X	MG RESISTOR	470Ω, 1/10W
R1013			NRVA02D-471X	CMF RESISTOR	470Ω, 1/10W	R1230			NRSA02J-102X	MG RESISTOR	1kΩ, 1/10W
R1014			NRVA02D-102X	CMF RESISTOR	1kΩ, 1/10W	R1231			NRSA02J-121X	MG RESISTOR	120Ω, 1/10W
R1015			NRVA02D-102X	CMF RESISTOR	1kΩ, 1/10W	R1232			NRSA02J-272X	MG RESISTOR	2.7kΩ, 1/10W
R1016			NRSA02J-122X	MG RESISTOR	1.2kΩ, 1/10W	R1233			NRSA02J-681X	MG RESISTOR	680Ω, 1/10W
R1017			NRSA02J-162X	MG RESISTOR	1.6kΩ, 1/10W	R1234			NRSA02J-222X	MG RESISTOR	2.2kΩ, 1/10W
R1018			NRSA02J-151X	MG RESISTOR	150Ω, 1/10W	R1235			NRSA02J-391X	MG RESISTOR	390Ω, 1/10W
R1019			NRSA02J-391X	MG RESISTOR	390Ω, 1/10W	R1236			NRSA02J-102X	MG RESISTOR	1kΩ, 1/10W
R1020			NRSA02J-332X	MG RESISTOR	3.3kΩ, 1/10W	R1237			NRSA02J-123X	MG RESISTOR	12kΩ, 1/10W
R1021			NRSA02J-332X	MG RESISTOR	3.3kΩ, 1/10W	R1238			NRSA02J-223X	MG RESISTOR	22kΩ, 1/10W
R1025			NRSA02J-823X	MG RESISTOR	82kΩ, 1/10W	R1239			NRSA02J-471X	MG RESISTOR	470Ω, 1/10W
R1026			NRSA02J-102X	MG RESISTOR	1kΩ, 1/10W	R1240			NRSA02J-223X	MG RESISTOR	22kΩ, 1/10W
R1027			NRSA02J-561X	MG RESISTOR	560Ω, 1/10W	R1242			NRSA02J-471X	MG RESISTOR	470Ω, 1/10W
R1028			NRSA02J-561X	MG RESISTOR	560Ω, 1/10W	R1243			NRSA02J-821X	MG RESISTOR	820Ω, 1/10W
R1029			NRSA02J-473X	MG RESISTOR	47kΩ, 1/10W	R1244			NRSA02J-470X	MG RESISTOR	47Ω, 1/10W
R1030			NRSA02J-473X	MG RESISTOR	47kΩ, 1/10W	R1245			NRSA02J-470X	MG RESISTOR	47Ω, 1/10W
R1031			NRSA02J-562X	MG RESISTOR	5.6kΩ, 1/10W	R1246			NRSA02J-151X	MG RESISTOR	150Ω, 1/10W
R1032			NRSA02J-181X	MG RESISTOR	180Ω, 1/10W	R1247			NRSA02J-102X	MG RESISTOR	1kΩ, 1/10W
R1037			NRSA02J-0R0X	MG RESISTOR	0Ω, 1/10W	R1248			NRSA02J-821X	MG RESISTOR	820Ω, 1/10W

#	△ REF No.	PART No.	PART NAME, DESCRIPTION		#	△ REF No.	PART No.	PART NAME, DESCRIPTION	
R1249		NRSA02J-152X	MG RESISTOR	1.5kΩ,1/10W	C1056		NCB21HK-103X	CAPACITOR	0.01μF,50V
R1250		NRSA02J-102X	MG RESISTOR	1kΩ,1/10W	C1057		NCB21HK-103X	CAPACITOR	0.01μF,50V
R1251		NRSA02J-102X	MG RESISTOR	1kΩ,1/10W	C1058		NCB21HK-103X	CAPACITOR	0.01μF,50V
R1253		NRSA02J-102X	MG RESISTOR	1kΩ,1/10W	C1063		NDC21HJ-101X	CAPACITOR	100pF,50V
R1255		NRSA02J-102X	MG RESISTOR	1kΩ,1/10W	C1064		NCB21HK-103X	CAPACITOR	0.01μF,50V
R1256		NRSA02J-681X	MG RESISTOR	680Ω,1/10W	C1065		QEKJ0JM-227	E CAPACITOR	220μF,6.3V
R1257		NRSA02J-103X	MG RESISTOR	10kΩ,1/10W	C1066		NCB21EK-223X	CAPACITOR	0.022μF,25V
R1259		NRSA02J-272X	MG RESISTOR	2.7kΩ,1/10W	C1067		NCB21HK-103X	CAPACITOR	0.01μF,50V
R1260		NRSA02J-101X	MG RESISTOR	100Ω,1/10W	C1068		QEKJ1HM-105	E CAPACITOR	1μF,50V
R1261		NRSA02J-221X	MG RESISTOR	220Ω,1/10W	C1069		QEKJ1CM-106	E CAPACITOR	10μF,16V
R1262		NRSA02J-332X	MG RESISTOR	3.3kΩ,1/10W	C1070		NCB21HK-103X	CAPACITOR	0.01μF,50V
R1263		NRSA02J-101X	MG RESISTOR	100Ω,1/10W	C1071		NCB21HK-103X	CAPACITOR	0.01μF,50V
R1264		NRSA02J-332X	MG RESISTOR	3.3kΩ,1/10W	C1072		NCB21HK-103X	CAPACITOR	0.01μF,50V
R1265		NRSA02J-272X	MG RESISTOR	2.7kΩ,1/10W	C1073		NDC21HJ-150X	CAPACITOR	15pF,50V
VR1001		QRE141J-0R0	RESISTOR,VCA LEVEL ADJ		C1074		NCB21HK-103X	CAPACITOR	0.01μF,50V
VR1002		QVZ3521-104Z	V RESISTOR,P.BURST LEVEL ADJ		C1082		NCB21HK-103X	CAPACITOR	0.01μF,50V
VR1201		QVP0039-103Z	TRIM RESISTOR,Y LEVEL ADJ		C1086		NCB21HK-103X	CAPACITOR	0.01μF,50V
C1001		QEKJ0JM-476	E CAPACITOR	47μF,6.3V	C1087		NCB21HK-103X	CAPACITOR	0.01μF,50V
C1002		QEKJ1HM-474	E CAPACITOR	0.47μF,50V	C1088		NCB21HK-103X	CAPACITOR	0.01μF,50V
C1003		QEKJ1CM-106	E CAPACITOR	10μF,16V	C1089		NCB21HK-103X	CAPACITOR	0.01μF,50V
C1005		QEKJ1EM-475	E CAPACITOR	4.7μF,25V	C1092		NCB21HK-103X	CAPACITOR	0.01μF,50V
C1006		NCB21HK-103X	CAPACITOR	0.01μF,50V	C1201		QEKJ0JM-337	E CAPACITOR	330μF,6.3V
C1007		NCF21EZ-104X	CAPACITOR	0.1μF,25V	C1202		NCB21HK-103X	CAPACITOR	0.01μF,50V
C1008		NCF21EZ-104X	CAPACITOR	0.1μF,25V	C1203		NCF21EZ-104X	CAPACITOR	0.1μF,25V
C1010		NCF21EZ-104X	CAPACITOR	0.1μF,25V	C1204		NCF21EZ-104X	CAPACITOR	0.1μF,25V
C1011		NDC21HJ-150X	CAPACITOR	15pF,50V	C1205		NCF21EZ-104X	CAPACITOR	0.1μF,25V
C1013		NCF21EZ-104X	CAPACITOR	0.1μF,25V	C1206		NCF21EZ-104X	CAPACITOR	0.1μF,25V
C1014		QEKJ1HM-225	E CAPACITOR	2.2μF,50V	C1207		NCF21EZ-104X	CAPACITOR	0.1μF,25V
C1015		QEKJ1EM-475	E CAPACITOR	4.7μF,25V	C1208		NCF21EZ-104X	CAPACITOR	0.1μF,25V
C1016		QEKJ1HM-225	E CAPACITOR	2.2μF,50V	C1209		NCF21CZ-105X	CAPACITOR	1μF,16V
C1017		NCB21HK-103X	CAPACITOR	0.01μF,50V	C1210		NCF21EZ-104X	CAPACITOR	0.1μF,25V
C1019		NCB21HK-103X	CAPACITOR	0.01μF,50V	C1211		QEKJ0JM-337	E CAPACITOR	330μF,6.3V
C1020		NCB21HK-103X	CAPACITOR	0.01μF,50V	C1212		NCF21EZ-104X	CAPACITOR	0.1μF,25V
C1021		NCB21HK-103X	CAPACITOR	0.01μF,50V	C1213		NCB21EK-473X	CAPACITOR	0.047μF,25V
C1022		QEKJ1HM-105	E CAPACITOR	1μF,50V	C1214		NCB21HK-103X	CAPACITOR	0.01μF,50V
C1023		QEKJ1HM-225	E CAPACITOR	2.2μF,50V	C1215		NCB21HK-102X	CAPACITOR	0.001μF,50V
C1024		NCB21HK-103X	CAPACITOR	0.01μF,50V	C1216		NCF21CZ-105X	CAPACITOR	1μF,16V
C1026		NCF21EZ-104X	CAPACITOR	0.1μF,25V	C1217		NCF21EZ-104X	CAPACITOR	0.1μF,25V
C1027		NCF21EZ-104X	CAPACITOR	0.1μF,25V	C1218		QEKJ0JM-107	E CAPACITOR	100μF,6.3V
C1028		QEKJ0JM-337	E CAPACITOR	330μF,6.3V	C1219		NCF21EZ-104X	CAPACITOR	0.1μF,25V
C1029		QEKJ1HM-104	E CAPACITOR	0.1μF,50V	C1220		NCF21EZ-104X	CAPACITOR	0.1μF,25V
C1030		QEKJ1HM-105	E CAPACITOR	1μF,50V	C1221		QEKJ1HM-335	E CAPACITOR	3.3μF,50V
C1031		QEKJ1HM-225	E CAPACITOR	2.2μF,50V	C1222		NCF21EZ-104X	CAPACITOR	0.1μF,25V
C1033		QEKJ1HM-105	E CAPACITOR	1μF,50V	C1223		NCB21HK-103X	CAPACITOR	0.01μF,50V
C1034		QEPF1HM-105	NP E CAPACITOR	1μF,50V	C1224		NDC21HJ-390X	CAPACITOR	39pF,50V
C1035		QEKJ1EM-475	E CAPACITOR	4.7μF,25V	C1225		NDC21HJ-220X	CAPACITOR	22pF,50V
C1036		QEKJ0JM-226	E CAPACITOR	22μF,6.3V	C1226		NDC21HJ-6R0X	CAPACITOR	6pF,50V
C1037		QEKJ1HM-225	E CAPACITOR	2.2μF,50V	C1227		NCB21HK-103X	CAPACITOR	0.01μF,50V
C1038		QEKJ1HM-225	E CAPACITOR	2.2μF,50V	C1228		NCB21HK-103X	CAPACITOR	0.01μF,50V
C1039		QEKJ1CM-476	E CAPACITOR	47μF,16V	C1229		NDC21HJ-470X	CAPACITOR	47pF,50V
C1040		NCB21HK-103X	CAPACITOR	0.01μF,50V	C1230		NDC21HJ-8R0X	CAPACITOR	8pF,50V
C1041		NDC21HG-301X	CAPACITOR	300pF,50V	C1231		NCF21EZ-104X	CAPACITOR	0.1μF,25V
C1042		NDC21HG-301X	CAPACITOR	300pF,50V	C1232		NCF21EZ-104X	CAPACITOR	0.1μF,25V
C1043		NDC21HG-221X	CAPACITOR	220pF,50V	C1233		NDC21HJ-680X	CAPACITOR	68pF,50V
C1044		NDC21HG-820X	CAPACITOR	82pF,50V	C1234		NDC21HJ-391X	CAPACITOR	390pF,50V
C1045		NCB21HK-103X	CAPACITOR	0.01μF,50V	C1235		NDC21HJ-100X	CAPACITOR	10pF,50V
C1046		NDC21HG-271X	CAPACITOR	270pF,50V	C1236		NCB21HK-103X	CAPACITOR	0.01μF,50V
C1047		NDC21HJ-101X	CAPACITOR	100pF,50V	C1237		NDC21HJ-221X	CAPACITOR	220pF,50V
C1048		NDC21HJ-181X	CAPACITOR	180pF,50V	C1238		NCB21HK-103X	CAPACITOR	0.01μF,50V
C1049		NDC21HG-301X	CAPACITOR	300pF,50V	C1239		NDC21HJ-470X	CAPACITOR	47pF,50V
C1050		NDC21HG-301X	CAPACITOR	300pF,50V	C1240		NDC21HJ-470X	CAPACITOR	47pF,50V

#	△	REF No.	PART No.	PART NAME, DESCRIPTION	
C1242			NDC21HJ-470X	CAPACITOR	47pF,50V
C1244			NDC21HJ-470X	CAPACITOR	47pF,50V
C1246			NDC21HJ-470X	CAPACITOR	47pF,50V
C1247			NDC21HJ-470X	CAPACITOR	47pF,50V
C1248			NDC21HJ-470X	CAPACITOR	47pF,50V
C1249			NDC21HJ-470X	CAPACITOR	47pF,50V
C1250			NCF21EZ-104X	CAPACITOR	0.1μF,25V
C1251			NCF21EZ-104X	CAPACITOR	0.1μF,25V
C1252			NCF21EZ-104X	CAPACITOR	0.1μF,25V
C1253			NDC21HJ-330X	CAPACITOR	33pF,50V
L1001			QQL29BJ-220Z	COIL	22μH
L1004			QQL071J-680Y	COIL	68μH
L1006			QQL29BJ-101Z	COIL	100μH
L1008			QQL29BJ-100Z	COIL	10μH
L1201			QQL29BJ-101Z	COIL	100μH
L1202			QQL29BJ-101Z	COIL	100μH
L1203			QQL29BJ-101Z	COIL	100μH
L1204			QQL071J-330Y	COIL	33μH
L1205			QQL071J-150Y	COIL	15μH
L1206			QQL071J-100Y	COIL	10μH
L1207			QQL071J-100Y	COIL	10μH
L1209			QQL231J-1R0Y	COIL	1μH
LC1201			QQR0657-013Z	NOISE FILTER	
SD1			LP30405-001B	S.CASE(S-VHS)	
SD2			LP30406-001A	S.PLATE(S-VHS)	
BK1			LP40077-001A	BRACKET(BOARD)	
CN1001			QGG2503K2-20	HEADER PIN,(11-30)MAIN	
CN1002			QGG2503K2-30	HEADER PIN,(1-30)MAIN	
CN1003			QGF1217F1-07	FPC CONNECTOR,(1-7)TERMINAL	

TERMINAL BOARD ASSEMBLY <06>

PW1	LPA10016-10A1	TERMINAL BOARD ASSY	
IC201	LC74799-9608	IC	
IC7131	BH7634AS	IC	
IC7191	MM1231XF	IC	
Q203	2SD1819A/QRS/-X	TRANSISTOR	
	or 2PC4081/R/-X	TRANSISTOR	
	or 2SC4081/QRS/-X	TRANSISTOR	
Q7131	2SA1576A/QR/-X	TRANSISTOR	
Q7151	2SA1576A/QR/-X	TRANSISTOR	
Q7152	2SA1576A/QR/-X	TRANSISTOR	
Q7191	DTC114EU	TRANSISTOR	
	or RN1302	TRANSISTOR	
	or UN5211	TRANSISTOR	
D7191	1SS133	DIODE	
	or 1N4148M	DIODE	
D7192	1SS133	DIODE	
	or 1N4148M	DIODE	
R201	NRSA02J-103X	MG RESISTOR	10kΩ, 1/10W
R204	NRSA02J-103X	MG RESISTOR	10kΩ, 1/10W
R205	NRSA02J-103X	MG RESISTOR	10kΩ, 1/10W
R206	NRSA02J-103X	MG RESISTOR	10kΩ, 1/10W
R208	NRSA02J-0R0X	MG RESISTOR	0Ω, 1/10W
R211	NRSA02J-103X	MG RESISTOR	10kΩ, 1/10W
R213	NRSA02J-101X	MG RESISTOR	100Ω, 1/10W
R226	NRSA02J-182X	MG RESISTOR	1.8kΩ, 1/10W

#	△	REF No.	PART No.	PART NAME, DESCRIPTION	
R252			NRSA02J-123X	MG RESISTOR	12kΩ, 1/10W
R253			NRSA02J-182X	MG RESISTOR	1.8kΩ, 1/10W
R254			NRSA02J-562X	MG RESISTOR	5.6kΩ, 1/10W
R255			NRSA02J-182X	MG RESISTOR	1.8kΩ, 1/10W
R258			NRSA02J-102X	MG RESISTOR	1kΩ, 1/10W
R7101			NRSA02J-750X	MG RESISTOR	75Ω, 1/10W
R7102			QRE141J-750Y	RESISTOR	75Ω, 1/4W
R7104			NRSA02J-101X	MG RESISTOR	100Ω, 1/10W
R7105			NRSA02J-101X	MG RESISTOR	100Ω, 1/10W
R7106			NRSA02J-101X	MG RESISTOR	100Ω, 1/10W
R7107			NRSA02J-101X	MG RESISTOR	100Ω, 1/10W
R7108			NRSA02J-750X	MG RESISTOR	75Ω, 1/10W
R7111			NRSA02J-101X	MG RESISTOR	100Ω, 1/10W
R7112			NRSA02J-101X	MG RESISTOR	100Ω, 1/10W
R7115			NRSA02J-101X	MG RESISTOR	100Ω, 1/10W
R7116			NRSA02J-101X	MG RESISTOR	100Ω, 1/10W
R7131			QRE141J-181Y	RESISTOR	180Ω, 1/4W
R7132			NRSA02J-103X	MG RESISTOR	10kΩ, 1/10W
R7133			NRSA02J-471X	MG RESISTOR	470Ω, 1/10W
R7134			NRSA02J-471X	MG RESISTOR	470Ω, 1/10W
R7151			NRSA02J-750X	MG RESISTOR	75Ω, 1/10W
R7152			NRSA02J-750X	MG RESISTOR	75Ω, 1/10W
R7153			NRSA02J-750X	MG RESISTOR	75Ω, 1/10W
R7154			NRSA02J-680X	MG RESISTOR	68Ω, 1/10W
R7157			QRE123J-391X	RESISTOR	390Ω, 1/2W
R7158			NRSA02J-101X	MG RESISTOR	100Ω, 1/10W
R7160			QRE123J-391X	RESISTOR	390Ω, 1/2W
R7161			NRSA02J-152X	MG RESISTOR	1.5kΩ, 1/10W
R7162			NRSA02J-102X	MG RESISTOR	1kΩ, 1/10W
R7191			NRSA02J-750X	MG RESISTOR	75Ω, 1/10W
R7192			NRSA02J-223X	MG RESISTOR	22kΩ, 1/10W
R7193			NRSA02J-123X	MG RESISTOR	12kΩ, 1/10W
R7194			NRSA02J-822X	MG RESISTOR	8.2kΩ, 1/10W
R7195			QRE142J-563	RESISTOR	56kΩ, 1/4W
R7196			QRE142J-152	RESISTOR	1.5kΩ, 1/4W
C201			NDC21HJ-100X	CAPACITOR	10pF,50V
C205			NDC21HJ-470X	CAPACITOR	47pF,50V
C206			NDC21HJ-470X	CAPACITOR	47pF,50V
C207			NCB21CK-224X	CAPACITOR	0.22μF,16V
C209			NCB21CK-224X	CAPACITOR	0.22μF,16V
C211			QEKJ1HM-105	E CAPACITOR	1μF,50V
C213			QEKJ1HM-105	E CAPACITOR	1μF,50V
C215			QEKJ0JM-227	E CAPACITOR	220μF,6.3V
C219			NCB21CK-224X	CAPACITOR	0.22μF,16V
C221			NDC21HJ-330X	CAPACITOR	33pF,50V
C251			NCB21EK-104X	CAPACITOR	0.1μF,25V
C252			QEKJ1EM-475	E CAPACITOR	4.7μF,25V
C253			NCB21CK-224X	CAPACITOR	0.22μF,16V
C254			QEKJ0JM-227	E CAPACITOR	220μF,6.3V
C255			NCB21EK-333X	CAPACITOR	0.033μF,25V
C256			QEKJ1EM-475	E CAPACITOR	4.7μF,25V
C258			NDC21HJ-560X	CAPACITOR	56pF,50V
C7101			NCB21HK-681X	CAPACITOR	680pF,50V
C7102			NCB21HK-681X	CAPACITOR	680pF,50V
C7105			NCB21HK-102X	CAPACITOR	0.001μF,50V
C7106			NCB21HK-102X	CAPACITOR	0.001μF,50V
C7110			NCB21HK-681X	CAPACITOR	680pF,50V
C7111			NCB21HK-681X	CAPACITOR	680pF,50V
C7119			NCB21HK-102X	CAPACITOR	0.001μF,50V
C7120			NCB21HK-102X	CAPACITOR	0.001μF,50V
C7131			QEKJ1EM-475	E CAPACITOR	4.7μF,25V

#	△ REF No.	PART No.	PART NAME, DESCRIPTION	
C7132		QEKJ1CM-476	E CAPACITOR	47μF,16V
C7133		NCB21HK-103X	CAPACITOR	0.01μF,50V
C7134		NCB21HK-223X	CAPACITOR	0.022μF,50V
C7135		NCB21HK-223X	CAPACITOR	0.022μF,50V
C7136		NCB21HK-223X	CAPACITOR	0.022μF,50V
C7137		NCB21HK-223X	CAPACITOR	0.022μF,50V
C7138		NDC21HJ-330X	CAPACITOR	33pF,50V
C7139		NDC21HJ-330X	CAPACITOR	33pF,50V
C7140		NDC21HJ-330X	CAPACITOR	33pF,50V
C7141		NDC21HJ-330X	CAPACITOR	33pF,50V
C7151		QETA0JM-477	E CAPACITOR	470μF,6.3V
C7153		NCB21HK-103X	CAPACITOR	0.01μF,50V
C7154		QEKJ1CM-476	E CAPACITOR	47μF,16V
C7155		NCB21HK-103X	CAPACITOR	0.01μF,50V
C7156		QCBB1HK-101	CAPACITOR	100pF,50V
C7157		NDC21HJ-101X	CAPACITOR	100pF,50V
C7191		QEKJ1CM-107	E CAPACITOR	100μF,16V
C7192		NCB21HK-103X	CAPACITOR	0.01μF,50V
C7193		NCB21HK-103X	CAPACITOR	0.01μF,50V
C7194		NCB21HK-103X	CAPACITOR	0.01μF,50V
C7195		QEKJ1CM-106	E CAPACITOR	10μF,16V
C7196		QEKJ1CM-106	E CAPACITOR	10μF,16V
C7197		NCB21HK-103X	CAPACITOR	0.01μF,50V
C7198		NCB21HK-103X	CAPACITOR	0.01μF,50V
C7199		NCB21HK-103X	CAPACITOR	0.01μF,50V
L202		QQL29BJ-330Z	COIL	33μH
L204		QQL29BK-1R0Z	COIL	1μH
L206		QQL231J-1R0Y	COIL	1μH
L251		QQL231J-100Y	COIL	10μH
L252		QQL231J-220Y	COIL	22μH
L7101		QQL231J-R22Y	COIL	0.22μH
L7102		QQL231J-4R7Y	COIL	4.7μH
L7103		QQL231J-4R7Y	COIL	4.7μH
L7104		QQL231J-4R7Y	COIL	4.7μH
L7105		QQL231J-4R7Y	COIL	4.7μH
L7106		QQL231J-1R0Y	COIL	1μH
L7107		QQL231J-4R7Y	COIL	4.7μH
L7108		QQL231J-4R7Y	COIL	4.7μH
L7112		QQL231J-4R7Y	COIL	4.7μH
L7113		QQL231J-4R7Y	COIL	4.7μH
L7132		QQL231J-1R0Y	COIL	1μH
L7133		QQL231J-1R0Y	COIL	1μH
L7134		QQL231J-1R0Y	COIL	1μH
L7135		QQL231J-1R0Y	COIL	1μH
SW7151		QSW0693-001	SLIDE SWITCH	
TB1		LP30361-009B	TERMINAL BOARD ASSY	
OT1		QYTDSF3008Z	SCREW,X8	
ET1		PQ21987-1-1	EATH PLATE(TERMINAL)	
J7101		PEMC1177	RGB21PIN SOCKET,A/V 1	
J7102		PEMC1177	RGB21PIN SOCKET,A/V 2	
J7103		QNN0023-002	PIN JACK,AUDIO OUT(R)	
J7104		QNN0023-003	PIN JACK,AUDIO OUT(L)	
J7152		QND0009-001	S JACK	
CN7101		QGB2013J1-13	CONNECTOR,(1-13)MAIN	
CN7102		QGB2013J1-11	CONNECTOR,(3-13)MAIN	
CN7103		QGB2013J1-11	CONNECTOR,(1-11)MAIN	
CN7151		QGF1208F1-07	FPC CONNECTOR,(1-7)2D SVHS	
CN7191		QGF1208F1-04	FPC CONNECTOR,(1-4)FRONT	

#	△ REF No.	PART No.	PART NAME, DESCRIPTION

AUDIO CONTROL HEAD BOARD ASSEMBLY <12>

PW1	LPA10010-01A1	A/C HEAD BOARD ASSY
CN1	QGF1208F1-07	FPC CONNECTOR

DEMOD BOARD ASSEMBLY <14>

PW1	LPA10021-01A	DEMOD BOARD ASSY	
IC6701	MSP3415D	IC	
Q6701	2SC3068	TRANSISTOR	
Q6702	2SC3354/TS-T	TRANSISTOR	
Q6704	DTC114EU	TRANSISTOR	
Q6705	DTC114EU	TRANSISTOR	
D6702	MTZJ9.1B	ZENER DIODE	
D6703	1N4148M	DIODE	
	or 1SS133	DIODE	
D6704	1N4148M	DIODE	
	or 1SS133	DIODE	
R6701	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
R6702	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
R6703	NRSA02J-271X	MG RESISTOR	270Ω,1/10W
R6704	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
R6705	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
R6706	NRSA02J-392X	MG RESISTOR	3.9kΩ,1/10W
R6707	NRSA02J-470X	MG RESISTOR	47Ω,1/10W
R6708	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
R6709	NRSA02J-271X	MG RESISTOR	270Ω,1/10W
R6710	NRSA02J-151X	MG RESISTOR	150Ω,1/10W
R6712	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
R6713	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
R6714	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
R6715	NRSA02J-223X	MG RESISTOR	22kΩ,1/10W
R6716	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
R6717	NRSA02J-223X	MG RESISTOR	22kΩ,1/10W
R6718	NRSA02J-684X	MG RESISTOR	680kΩ,1/10W
C6703	QEKJ1CM-336	E CAPACITOR	33μF,16V
C6704	QEKJ1CM-107	E CAPACITOR	100μF,16V
C6705	NCB21HK-103X	CAPACITOR	0.01μF,50V
C6706	NCB21HK-223X	CAPACITOR	0.022μF,50V
C6707	NCB21HK-103X	CAPACITOR	0.01μF,50V
C6708	NCB21HK-103X	CAPACITOR	0.01μF,50V
C6709	QEKJ1CM-336	E CAPACITOR	33μF,16V
C6710	NCB21HK-682X	CAPACITOR	0.0068μF,50V
C6711	NCB21HK-682X	CAPACITOR	0.0068μF,50V
C6712	QEKJ1HM-225	E CAPACITOR	2.2μF,50V
C6713	QEKJ1HM-225	E CAPACITOR	2.2μF,50V
C6714	NCB21HK-103X	CAPACITOR	0.01μF,50V
C6716	NCB21HK-103X	CAPACITOR	0.01μF,50V
C6717	NCB21HK-223X	CAPACITOR	0.022μF,50V
C6718	QEKJ1CM-336	E CAPACITOR	33μF,16V
C6719	QEKJ1CM-106	E CAPACITOR	10μF,16V
C6720	QEKJ1CM-106	E CAPACITOR	10μF,16V
C6721	NCB21HK-103X	CAPACITOR	0.01μF,50V
C6722	QEKJ1CM-106	E CAPACITOR	10μF,16V
C6723	NCB21HK-103X	CAPACITOR	0.01μF,50V

#	△ REF No.	PART No.	PART NAME, DESCRIPTION
C6727		NDC21HJ-470X	CAPACITOR 47pF,50V
C6728		NDC21HJ-470X	CAPACITOR 47pF,50V
C6729		NDC21HJ-8R0X	CAPACITOR 8pF,50V
C6730		NDC21HJ-1R0X	CAPACITOR 1pF,50V
L6701		QQL29BK-1R0Z	COIL 1μH
L6702		QQL29BJ-3R3Z	COIL 3.3μH
L6703		QQL29BJ-680Z	COIL 68μH
L6704		QQL29BK-1R0Z	COIL 1μH
L6705		QQL29BJ-221Z	COIL 220μH
LC6701		QQR0657-013	NOISE FILTER
X6701		QAX0443-001	CRYSTAL RESONATOR
BK1		LP40077-001A	BRACKET(BOARD)
CN6701		QGG2502K1-11	HEADER PIN,(1-11)MAIN

SPATIALIZER BOARD ASSEMBLY <24>

PW1	LPA10022-01A	SPATIALIZER BOARD ASSY
IC2701	AN7395S	IC
Q2701	2SC4081/QRS/-X	TRANSISTOR
D2701	MTZJ10B	ZENER DIODE
R2701	NRSA02J-105X	MG RESISTOR 1MΩ,1/10W
R2702	NRSA02J-472X	MG RESISTOR 4.7kΩ,1/10W
R2703	NRSA02J-122X	MG RESISTOR 1.2kΩ,1/10W
R2705	NRSA02J-223X	MG RESISTOR 22kΩ,1/10W
R2706	NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W
R2707	NRSA02J-101X	MG RESISTOR 100Ω,1/10W
R2708	NRSA02J-221X	MG RESISTOR 220Ω,1/10W
R2709	NRSA02J-223X	MG RESISTOR 22kΩ,1/10W
C2701	QEKJ1CM-106	E CAPACITOR 10μF,16V
C2702	QEKJ1CM-106	E CAPACITOR 10μF,16V
C2703	QEKJ0JM-226	E CAPACITOR 22μF,6.3V
C2704	QEKJ0JM-226	E CAPACITOR 22μF,6.3V
C2705	NCB21HK-563X	CAPACITOR 0.056μF,50V
C2706	NCB21HK-393X	CAPACITOR 0.039μF,50V
C2707	QEKJ1CM-106	E CAPACITOR 10μF,16V
C2708	QEKJ1CM-106	E CAPACITOR 10μF,16V
C2710	NCB21HK-103X	CAPACITOR 0.01μF,50V
C2711	NCB21HK-273X	CAPACITOR 0.027μF,50V
C2712	QEKJ1CM-106	E CAPACITOR 10μF,16V
C2713	QEKJ1CM-476	E CAPACITOR 47μF,16V
C2716	QEKJ1CM-476	E CAPACITOR 47μF,16V
CN2702	QGG2502K1-08	HEADER PIN,(1-8)MAIN

SW/DISPLAY BOARD ASSEMBLY <28>

PW1	LPA10018-17A1	DISPLAY BOARD ASSY
IC7001	M35500BFP	IC
	or M35500AGP	IC
	or M35500BGP	IC
IC7002	PNA4652M00XB	IR DETECT UNIT
	or GP1U281X	IR DETECT UNIT
D7002	RD9.1ES/B2/-T2	ZENER DIODE
	or MTZJ9.1B	ZENER DIODE

#	△ REF No.	PART No.	PART NAME, DESCRIPTION
		or UZ9.1BSB	ZENER DIODE
D7005		1N4148M	DIODE
		or 1SS133	DIODE
D7010		SLR-342VC3F	LE DIODE
R7001		QRE141J-471Y	RESISTOR 470Ω,1/4W
R7002		QRE141J-471Y	RESISTOR 470Ω,1/4W
R7003		QRE141J-471Y	RESISTOR 470Ω,1/4W
R7004		QRE141J-471Y	RESISTOR 470Ω,1/4W
R7005		QRE141J-103Y	RESISTOR 10kΩ,1/4W
R7006		QRE141J-103Y	RESISTOR 10kΩ,1/4W
R7007		QRE141J-103Y	RESISTOR 10kΩ,1/4W
R7008		QRE141J-103Y	RESISTOR 10kΩ,1/4W
R7013		QRE141J-103Y	RESISTOR 10kΩ,1/4W
R7014		QRE141J-470Y	RESISTOR 47Ω,1/4W
R7015		QRE141J-0R0Y	RESISTOR 0Ω,1/4W
R7020		QRE141J-103Y	RESISTOR 10kΩ,1/4W
R7021		QRE141J-122Y	RESISTOR 1.2kΩ,1/4W
R7022		QRE141J-182Y	RESISTOR 1.8kΩ,1/4W
R7023		QRE141J-222Y	RESISTOR 2.2kΩ,1/4W
R7024		QRE141J-272Y	RESISTOR 2.7kΩ,1/4W
R7025		QRE141J-472Y	RESISTOR 4.7kΩ,1/4W
R7026		QRE141J-682Y	RESISTOR 6.8kΩ,1/4W
R7027		QRE141J-153Y	RESISTOR 15kΩ,1/4W
R7028		QRE141J-393Y	RESISTOR 39kΩ,1/4W
R7030		QRE141J-103Y	RESISTOR 10kΩ,1/4W
R7031		QRE141J-122Y	RESISTOR 1.2kΩ,1/4W
R7032		QRE141J-182Y	RESISTOR 1.8kΩ,1/4W
R7033		QRE141J-222Y	RESISTOR 2.2kΩ,1/4W
R7034		QRE141J-272Y	RESISTOR 2.7kΩ,1/4W
R7035		QRE141J-472Y	RESISTOR 4.7kΩ,1/4W
R7036		QRE141J-682Y	RESISTOR 6.8kΩ,1/4W
R7037		QRE141J-153Y	RESISTOR 15kΩ,1/4W
R7038		QRE141J-393Y	RESISTOR 39kΩ,1/4W
R7041		QRE141J-331Y	RESISTOR 330Ω,1/4W
C7001		QDVB1EZ-223Y	CAPACITOR 0.022μF,25V
C7002		QEKC1HM-106	E CAPACITOR 10μF,50V
C7007		QEKJ1CM-476	E CAPACITOR 47μF,16V
C7008		QDVB1EZ-223Y	CAPACITOR 0.022μF,25V
C7009		QCSB1HJ-150	CAPACITOR 15pF,50V
C7010		QCFB1HZ-104	CAPACITOR 0.1μF,50V
C7011		QEKJ0JM-337	E CAPACITOR 330μF,6.3V
C7192		QCCB1HJ-681	CAPACITOR 680pF,50V
C7194		QCCB1HJ-681	CAPACITOR 680pF,50V
L7191		QRE141J-101Y	RESISTOR 100Ω,1/4W
L7192		QRE141J-101Y	RESISTOR 100Ω,1/4W
S7001		QSW0456-002Z	TACT SWITCH,POWER
S7002		QSW0456-002Z	TACT SWITCH,CH+
S7003		QSW0456-002Z	TACT SWITCH,CH-
S7004		QSW0456-002Z	TACT SWITCH,REC
S7005		QSW0456-002Z	TACT SWITCH,PAUSE
S7008		QSW0456-002Z	TACT SWITCH,DISPLAY
S7009		QSW0456-002Z	TACT SWITCH,SP/LP
S7010		QSW0456-002Z	TACT SWITCH,TIMER
S7011		QSW0456-002Z	TACT SWITCH,SPATIALIZER
S7012		QSW0456-002Z	TACT SWITCH,C.RESET
S7013		QSW0456-002Z	TACT SWITCH,ST BOX
S7014		QSW0456-002Z	TACT SWITCH,STOP/EJECT
S7015		QSW0456-002Z	TACT SWITCH,PLAY
DI7001		QLF0032-002	FL TUBE
HD1		PQ34668	FDP HOLDER(L),DI7001
HD2		PQ34669	FDP HOLDER(R),DI7001

#	△ REF No.	PART No.	PART NAME, DESCRIPTION
	HD4	PQM30038-6	LED HOLDER,D7010
	FW7001	QUM032-07A4A4	PARA RIBON WIRE
	J7191	PEMC1009-04	PIN JACK,VIDEO IN
	J7192	PEMC1010-03	PIN JACK(SW),AUDIO(L)IN
	J7193	PEMC1010-02	PIN JACK(SW),AUDIO(R)IN
	CN7001	QGF1208C1-12	FPC CONNECTOR,(1-12)MAIN
	CN7191	QGF1207C1-05	FPC CONNECTOR,(3-7)MAIN

REC SAFETY BOARD ASSEMBLY <32>

PW2	LPA10018-01B2	REC SAFETY BOARD ASSY
S7041	QSW0602-002	PUSH SWITCH

JACK BOARD ASSEMBLY <36>

PW4	LPA10018-08B4	JACK BOARD ASSY
J7194	QND0009-001	S JACK,S VIDEO
CN7192	QGF1207F1-04	FPC CONNECTOR,(1-4)

JOG BOARD ASSEMBLY <37>

PW3	LPA10018-01B3	JOG BOARD ASSY
UN7091	PEME0786-02	JOG SHUTTLE ASSY
CN7005	QGF1207F1-07	FPC CONNECTOR,(1-7)

LOADING MOTOR BOARD ASSEMBLY <55>

PW2	LPA10010-01A2	L.MOTOR BOARD ASSY
CN1	QGB2533K1-02	CONNECTOR

#	△ REF No.	PART No.	PART NAME, DESCRIPTION
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